Collectors' Edition: Saving the Water Planet

Rodale's The Magazine Divers Trust

SCIBAL MING

Jacquest Editor, Jacques Cousteau

Exclusive Interview, pg. 58

World's Top 13 Marine Parks

Rate Yourself! Eco-Diving Quiz

Make Your Bottom Time Count 58 Volunteer Dives

Ocean Saviors
The Heroes Next Door

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"To an underwater photographer, time is even more precious than light." David Doubilet

For nearly two decades, David Doubilet has been recognized as one of the world's most artistically ambitious underwater photographers. As elegantly composed as they are painstakingly lit, David's photographs possess the intimacy and detail of great portraiture.

He says, "I look underwater for the same basic elements that a surface photographer does—light, color, motion, and gesture—and no place on earth offers a more subtle variety

To achieve his singular effects, he and his assistants submerge themselves for hours at a stretch, taking with them as many as ten complete camera systems, spare SCUBA tanks, and computers to carefully monitor their dives.

Yet, of all his equipment, David has come to trust the reliability of his Rolex Submariner most of all. "Underwater," Doubilet says, "your health depends on proper

place on earth offers a more subtle variety timing. I would never dive without my Rolex."

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Inside Scuba Diving

BY JACQUES-YVES COUSTEAU

PRESCRIPTION FOR A PLANET

Dear Readers of Rodale's Scuba Diving:

shipwrecked sailor was struggling in the water. The shore was near, but his strength was almost spent. Suddenly there was a friendly presence in the water—a strong, sleek body that buoyed him, escorted him to shallow water and saved his life.

Stories like this have been told countless times about dolphins and porpoises. Though they seem difficult to believe, their explanations may lie in a simple trait that dolphins share with a majority of animals, including you and me, the instinct to protect the next generation. When a dolphin mother gives birth, her baby is expelled under water. Her first critical act following the birth is to lift her youngster to the surface for its first breath. So powerful is this motherly instinct that female dolphins have pushed other struggling animals, like this sailor, to the surface.

To me this urge to save life is marvelous because the successful replication of life is what makes our water planet such a rich biomass, fertile and prolific, forever generating and nurturing new organisms.

Yet do we earthlings cherish and guard this irreplaceable and miraculous treasure? To the contrary. Each month we pour millions of tons of poisonous waste into the global water system. Many of our lakes, rivers and coastal waters have received mortal wounds. The water is undrinkable; the fish and shellfish, if they exist at all, are contaminated.

I do not say these things lightly. For more than 50 years, my team and I have spent thousands of hours under water. I have seen with my own eyes how our waters have sickened. Reefs that teemed with fish only 10 years ago are now almost lifeless. The ocean bottoms have been raped by trawlers. Priceless wetlands have been destroyed by development. Everywhere, there are sticky globs of oil, plastic refuse and clouds of poisonous effluents.

Often, when I describe the symptoms of our environmental illness, I hear

remarks like, "they're only fish" or "they're only whales" or "they're only birds." But they are much, much more, and their destinies are linked with ours in the most profound and fundamental manner. For all life is interconnected, and the great life-giving wellspring that sustains us all is the sea.

If we continue to use the sea as our global sewer, disrupting the natural processes of our biosphere, we will bring catastrophe upon ourselves. We will face a bleak future, deprived of the great resources of the sea. Yet this is only the beginning. Climatic changes will dramatically alter global temperatures which will cause melting of the polar ice caps, resulting in a significant rise in the water level of the oceans. Entire populations would

be driven inland only to meet with famine, chaos and disease on a scale impossible to imagine. It is clear that disaster in the oceans means disaster for mankind.

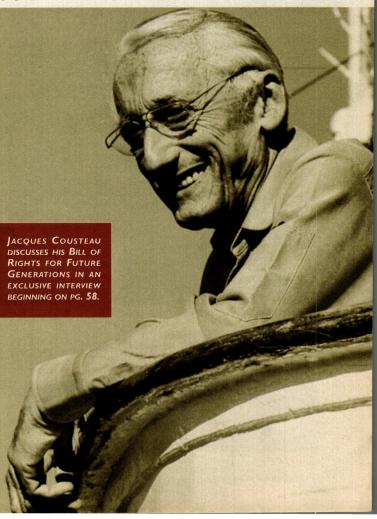
I beg you not to dismiss these horrors as science fiction. Once we pollute this world beyond repair, there will be no place to hide. Earth is the only planet we know where life can exist. It is the rarest of phenomena: a water planet, a dynamic world water machine powered by the sun and the moon, the cradle in which life originated. The ocean is life; yet still I ask, do we

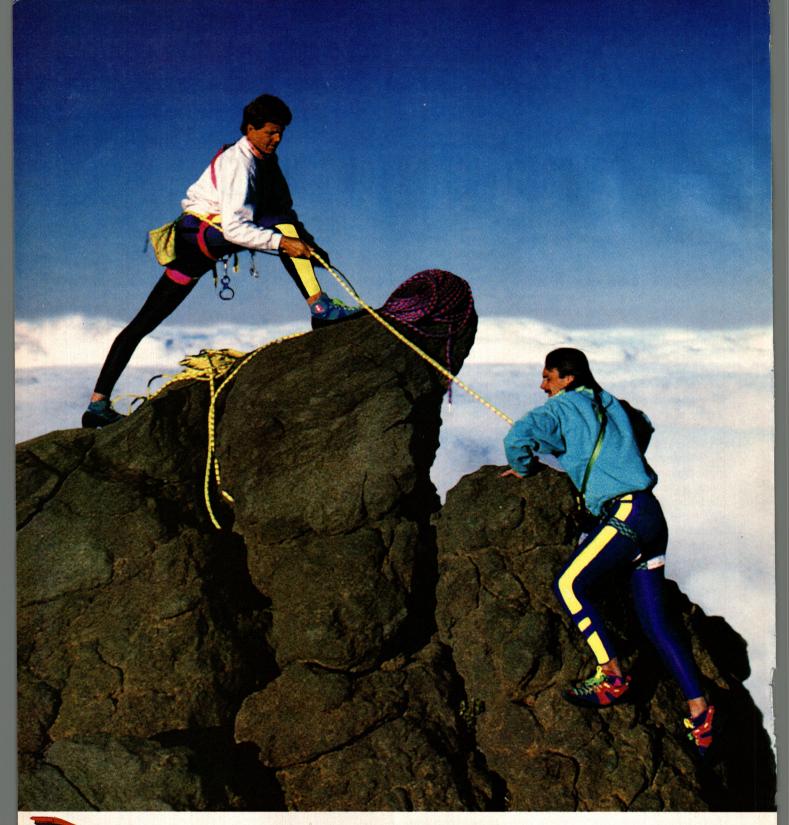
cherish and guard it?

I passionately believe that those few of us who perceive the disaster ahead must band together now to warn the slumbering many. We must work for corrective measures that can be put into effect immediately for pioneering research and exploration to help us better understand the sea and its creatures. To this crusade, I have solemnly pledged what years remain to me. As I do, I hope you will stand beside me.

You can support Capt. Cousteau's efforts by joining one of the marine protection groups listed on page 89.

PHOTO COURTESY COUSTEAU SOCIETY/ RICHARD C. MU







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- **ECO-HEROES** Who's saving our oceans? It just may be the guy or gal next door. ~By Paul Kvinta
- 49 A YEAR'S WORTH OF VOLUNTEER DIVES Use our calendar of worthwhile dive opportunities to make your bottom time count.
- **GET REAL** America's most controversial environmental writer has a stunning message for us all: The sky is *not* falling. ~*An essay by Gregg Easterbrook*
- **COUSTEAU: THE INTERVIEW** In a rare conversation, RSD picks the brain of the world's first and most prolific diver. ~By David Taylor
- **QUIZ: ARE YOU A REEF WRECKER?** Think you're God's gift to the planet? Take our eco-quiz to see how you measure up.

Weekenders

- **GRAY'S REEF NATIONAL MARINE SANCTUARY** Off the Georgia coast, a calving ground for right whales is a national treasure for divers. ~By Unndór Jónsson
- **2.5 OLYMPIC COAST NATIONAL MARINE SANCTUARY** Life both big and small is celebrated in America's newest national marine sanctuary. ~By Brandon D. Cole

Diver's Handbook

- **89 CONSERVATION GROUPS** Making a difference in the health of the world's waterways can be as easy as writing a check. Here's who you should pay to the order of. ~By Unndór Jónsson
- **96 FIELD NOTES** Fish and reef critters are gracious hosts under water. Here's how be a good guest. ~By Richard Martin
- **DIVE MEDICINE** The dive doctor fields questions about asthma, equalizing and diving after surgery. ~By Samuel Shelanski, M.D.

Cover photography by Jonathan Levine

DEPART MENTS INSIDE SCUBA DIVING Prescription for a planet. -By Guest Editor Jacques Cousteau LETTERS 6 Cayman Cowboys: Gunfight at the Not-So-OK corral. SEAVIEW Sea turtle massacre; Keys to the future; Martians on ice. ~Edited by Keith Phillips READER RATER CARD How was your last dive trip? Tell it like it is. DAN NEWSLETTER 117 Would you know what to do with a drowning diver? FAR HORIZONS Catch them while they last: A look at some endangered aquatic creatures. A RODALE PRESS PUBLICATION

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CAYMAN Cowboys

Paul Kvinta's "Cayman Cowboys" article (Sept./Oct. 1995) generated not only letters, faxes, phone calls and email, but readers were heating up the Internet

and commercial on-line services with debate about the article. The response was good, it was bad, but it was decidedly not indifferent. Here's a sampling.

When Paul Kvinta approached me and said Rodale's Scuba Diving was interested in publishing an article about divemasters in the Cayman Islands, I was delighted. We don't get a lot of recognition for the job we do. We have the responsibility for people's lives every day of the year. We are responsible, professional individuals who don't want to be praised for what we do. A little recognition from the rest of the recreational dive industry every now and again is always appreciated though.

Instead, your article focuses on things that although may happen, are a very insignificant part of our profession. We work in the service industry, our clients pay our wages, we respect our clients. We also respect the government and people of the Cayman Islands for allowing us to come to their country and work. Our commitment to our clients and the people of the Cayman Islands was expressed to Mr. Kvinta for the article, but for some reason beyond my comprehension he chose to ignore this.

Your article is way off the mark. If you really wanted an inside look at a divemaster's life, you should have had a divemaster write it. Mr. Kvinta's concept is as far from the truth as you can get.

> **DAN HODGINS** GRAND CAYMAN

After skimming all the outraged on-line flame-mail about the Cayman Cowboys piece, I finally received my issue at home and dove into the offending feature, expecting to find something really horrible. Instead, I was pleased to find a wellwritten, very interesting, very human glimpse at an industry that is routinely sanitized to utter blandness in the slick diving mags. The guys in your article may offend a vast number of hardworking divemasters out there, but they aren't very different from the ones I knew during my years in the Caribbean, and at



least they seem real and worth writing about. I'd rather have an honest look at life on a divers' island than the usual monthly PR pictures of divemasters.

> KURT BUSCH FOSTER CITY, CALIF.

I've been to the Cayman Islands dozens of times. Our dive store has sent thousands of people to the Cayman Islands over the last 20 years. I've never encountered or heard of the behavior described at the beginning of "Cowboys." If anything, Grand Cayman is rather dignified. We certainly consider it to be a family-oriented destination. If journalists were allowed to use innuendo as the basis of articles, such stories could probably be written about any diving destination or any location, anywhere.

We will continue to promote the Cayman Islands as a wholesome and world-class diving destination.

JOHN WALL, PRESIDENT THE DIVE SHOP FAIRFAX, VA.

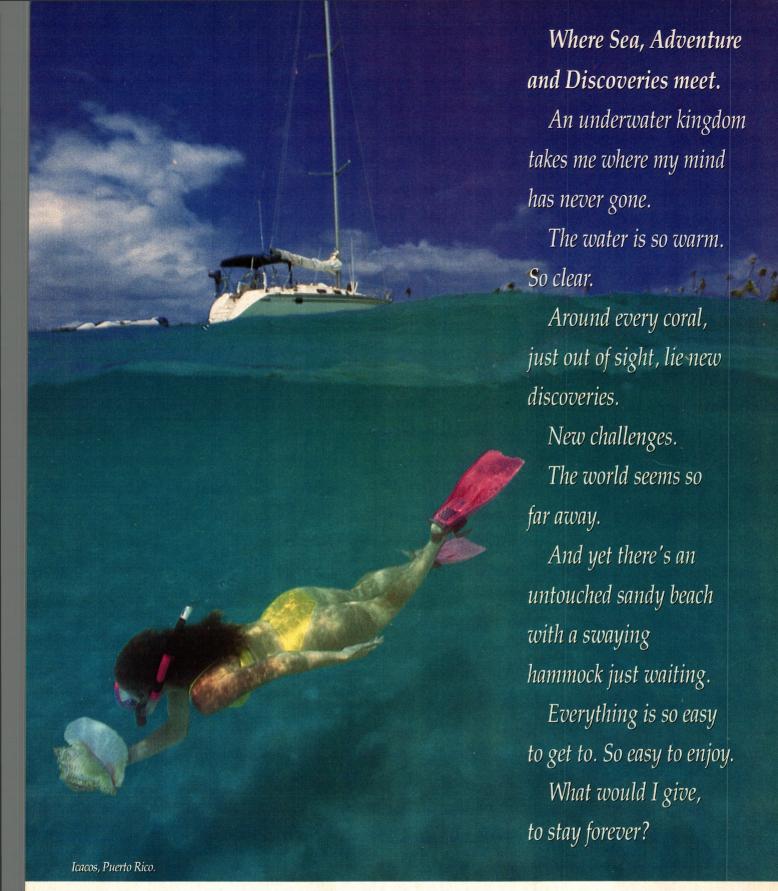
Sure, [the article] shows a side of scuba that is not the most attractive and, yes, the divemasters in question do not seem to be the best representatives of their sport, but one thing I do know is that I am tired of the kid-glove treatment of dive resorts, products and personalities that most scuba mags give us. Almost without exception I get to read the same sort of reviews of equipment, resorts or schools in almost every article. Most scuba mags aren't real magazines, they're trade publications. They love the gear, they love the guys and gals and on and on. So I applaud RSD for doing something a bit different.

Every hero has a pimple or two and I think it's fine to take these into account when we learn about them. These guys have a lot of pimples, and they're no heroes! Outside magazine has been doing this type of reporting for years and I keep those periodicals. Why? Because the articles are so damn good!

I think you just may be shocked to see some actual reportage appear in a dive mag!

> JOEL MARKWELL ATLANTA, GA.

I was truly appalled by your cover story of the less-than-admirable exploits of

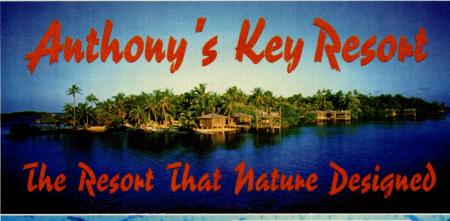


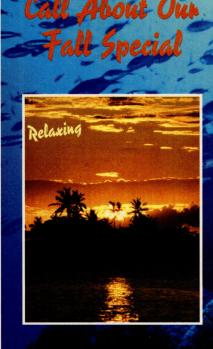
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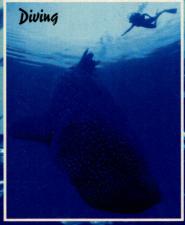
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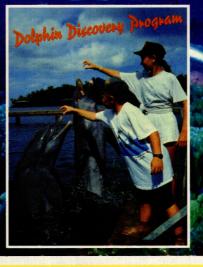
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ever moves, and then try to dive), but please don't glamorize these idiots and waste space in your magazine on their juvenile behavior viewed entirely from a somewhat misguided male's perspective (i.e., the author's). Come on, guys, this is 1995, not 1965! I had come to trust that you have more class than you demonstrated by printing this article. And since I've never written a letter like this before, I am assuming that among the women and sensible men who read your nationally distributed magazine, I am not alone in my disgust. I would cancel my subscription immediately if I didn't like reading Scuba Diving each month and find the variety of information useful, so I'll give you one more chance. Please show some good judgment in what you print in the future and realize that a good number of your readers are women—women who purchase lots of equipment and dive travel from your advertisers.

"Cayman Cowboys." Let them do what they will (i.e., smoke, drink, screw what-

KRISTIE BOERING CAMBRIDGE, MASS.

I read with interest your recent article on "Cayman Cowboys" and expect that you will be targeted with carefully orchestrated furor from the sport's moral guardians. Of course, if this had been an article about the *après ski* activities of those other notorious resort employees in Aspen or Vail, I doubt if the piece would have been greeted with even an uplifted eyebrow.

Your article was entertaining and didn't expose any behavior that isn't available for anyone to see at most Caribbean bars on a Saturday night.

Keep your corporate chin up. I'd like to think that the readers can decide for themselves what makes interesting journalism. For those self-righteous breast beaters urging readers to lynch your writer and shun your magazine, I say "lighten up, please." And go back to watching "The Waltons" and "Little House on the Prairie" if reality is too strong for you.

Bret Gilliam, President Ocean Tech Bath, Maine

I am neither a prude nor a feminist. I simply found this article to be completely demeaning to the industry and profession I have dedicated my life to. This is not to say the story was inaccurate. I have visited the Caymans, and it's typical

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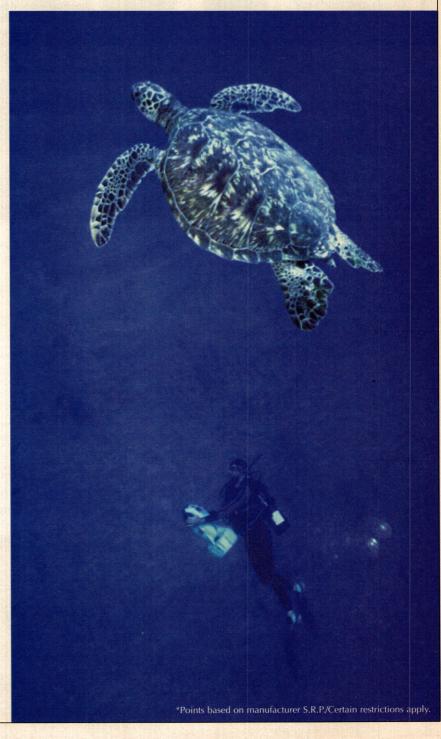


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of many other destinations. What information did it provide that is useful to your readers, however? If the author attempts to claim that there was a purpose in writing this article, I can think of only one—to recruit as many horny jackasses as possible to become instructors and divemasters for all the wrong reasons. To even try to depict these guys as professional when they're in the water is sickening, considering why they're there in the first place.

> GEORGE BRANDT U.S. DIVERS SANTA ANA, CALIF.

The Cayman article may not be a journalistic masterpiece or socially significant, but so what? I found it amusing and fun. It certainly wasn't meant to denigrate women. Why does every article have to be socially redeeming, totally serious and with "merit"? It doesn't in any way reflect poorly on instructors, divemasters, etc. It merely documents a small slice of life for a few men on Cayman.

Get a life. Come down from the high (sea)horse, and have some fun.

STEWART GIVEN SANTA MONICA, CALIF.

Top 10 reasons Rodale's Scuba Diving published the Cayman Cowboys article:

- 10. Proves there's more to scuba diving than what DAN publishes.
- 9. Wanted to see if downturn in advertising revenues affects journalistic quality.
- 8. Had to justify the travel and expenses check for the reporter and the per diem for cover story was more than the general articles.
- 7. Earlier attempts to alienate women readers failed.
- 6. Editor not paying attention, thought it was an article on stingray round-up.
- 5. Wanted to start a new thread on rec.scuba.
- 4. The scheduled cover story was pulled and allowed the mock-up to go to
- 3. Wanted to further the cause of blond women being associated with lack of I.Q.
- 2. Just checking to see if we were reading.
- 1. Now on sale: RSD's 1996 Scuba Studs calendar.

IOANNA WOLFE DURHAM, N.C.

3/4 V 0 0 3/4

What's new, what's noteworthy under water.—EDITED BY KEITH PHILLIPS

INSIDE:

TURTLE MASSACRE

KEYS TO THE FUTURE (PGS. 12-13); A SOUND ARGUMENT (PG. 13); A FULL-COURT PRESS IN COZUMEL (PG. 14); **DIVING TO MARS (PG. 16).**



Live Slow, Die Fast

espite an international treaty to outlaw trade in endangered species, the harvest of sea turtles for their meat and shells continues throughout the world.

Although the Convention in Trade of Endangered Species (CITES) was signed by 122 countries, it does not cover domestic use or legislation—a loophole that allows wholesale slaughter of sea turtles within national boundaries. One of the worst examples takes place on the island of Bali, Indonesia, where fishermen began harvesting green turtles 100 years ago. By 1950, green turtles were extinct in the island's waters and fishermen expanded their range to include Eastern Indonesia, Irian Jaya, Sumatra, Papua New Guinea and Australia-hauling in as

many as 30,000 turtles a year. Balinese harvests have dropped to about 25,000 turtles a year since 1991 but remain the largest concentrated kill of green turtles anywhere in the world.

Turtle boats cruise the Indo-Pacific, catching turtles and piling them in cargo holds without food or water for days and weeks at a time. On arrival at Bali, the turtles' hind legs and front flippers are pierced and tied together and the animals are trucked to slaughterhouses in the village of Denpasar where they are carved alive. Butchers first peel away the stomach shell to retrieve any eggs, then cut out meat for delivery to restaurants. When all usable parts of the turtle have been carved away, the turtle is killed with a knife through its heart. "As long as the heart

beats," one of the men explains. "the meat will be better conserved."

Conservation groups, including SOS Sea Turtles, The World Wildlife Fund and the Center for Marine Conservation, estimate that

about 100,000 green turtles are killed each year in Indo-Pacific waters. Based on the current number of nesting turtles, the harvest is not sustainable.

In many poor countries, turtle meat is a source of protein and souvenirs made from turtle parts are an important source of income. Along the Miskito coast of Nicaragua and Honduras, an estimated 14,000 turtles are consumed

each year for food. In the Maldives, locals evade the law by scalping the shells off live turtles, then throw the animals back into the water where they languish for a few days before dying. Souvenir shops around the world carry trinkets made from turtle parts: shells cost \$5 to \$10, jewelry boxes \$20 to \$50 and eyeglass frames up to \$1,000. Small turtles are stuffed and sold for \$14 to \$25 in Fiji, Malaysia, Thailand and the Maldives.

Because turtles are migratory animals and are slow to reproduce, overharvesting by one country in a region can threaten the turtles' existence. According to Marydele Donnelly of the IUNC Marine Turtles Specialist Group, "The



CONSERVATION GROUPS ESTIMATE THAT 100.000 GREEN TURTLES ARE KILLED EACH YEAR IN INDO-PACIFIC WATERS.

protection of sea turtles is only as good as the area with the least protection."

> -ARNOLD WEISZ AND LANCE LEONHARDT

This story originally appeared in the Norwegian dive magazine Forlaget Dykking and was updated by RSD contributor Lance Leonhardt.

SEAVIEW

FLORIDA KEYS

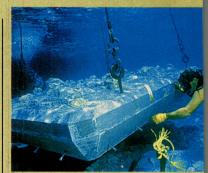
Is Everybody Happy?

hat's three volumes long, two inches thick and guaranteed to start an argument among the normally easygoing residents of the Florida Keys? The draft management plan for the Florida ing conflicts between boaters, sport and commercial fishermen, and divers. The zones include research areas off-limits to everyone, replenishment reserves off-limits to net, line and spearfishing, and sanctuary preservation areas that are

have to follow fishing and notake prohibitions in these areas. The trade-off, promise sanctuary managers, is a healthier diving environment.

The plan and its myriad of far-reaching regulations have drawn fire from many

Keys residents who don't like the idea of new regulations or the government spending \$6.6 million a year to enact them. Environmental organizations, however, support the plan as a comprehensive approach to protecting the environment from declining water quality and coral disease.



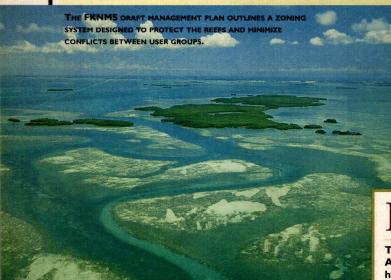
Quality of Life

ebate over the sanctuary management plan has focused unprecedented attention on the Florida Keys both its ecology and economy—as residents and governments search for environmental policies everyone can live with. Here's an update on

> ongoing environmental initiatives in the Keys.

► Water Quality In July, Florida agreed to strengthen regulations on septic system and shallow sewage injection wells in the Keys as requested by Reef Relief. Swaying the state's decision was a study showing that cesspools, septic systems and injection wells allow waste nutri-

ents and pathogens to seep out of the limestone and into nearshore waters in as little as four hours. Also in 1995, the state issued its first citations for sewage discharge from boats in state waters. To



Keys National Marine Sanctuary currently being circulated for public comment through the end of the year.

The comprehensive plan for managing the aquatic resources in the 2,800-square-mile park features 10 programs, from installing mooring buoys to improving water quality, in an attempt to balance the needs of the Keys' unique ecosystem and a \$853 million tourismbased economy.

At its heart is a zoning system designed to shelter wildlife and reefs while avoid-

complete "no-take" zones. In all, these zones cover just over 5 percent of the sanctuary.

The good news, says Key Largo dive operator Spencer Slate, is that "divers will still be able to dive every square inch of the reefs, except for the research areas, which

are tiny. They're not even a square mile and nobody would be diving them from a charter boat anyway." While divers will have complete access to replenishment and preservation zones, they will

Last Call

The National Oceanic and Atmospheric Administration will hold a series of public hearings on the plan in November and is accepting written comments through Dec. 31. All comments will be reviewed and a final plan submitted for approval in 1996 by NOAA officials and the State of Florida.

For a copy of the three-volume plan or a shorter summary, call (305) 743-2437. At press time, hearings were scheduled for: Nov. I—Miami; Nov. 3—Key Largo; Nov. 6—Marathon; Nov. 7—Key West; Nov. 9—St. Petersburg; Nov. 14—Washington, D.C. Call Alyson Simmons at (305) 292-0311 for times and locations.

"The key to protecting the reefs for the future is integrated management," says Project ReefKeeper director Alex Stone, "because you look at all the things that impact the reef as a whole."

encourage compliance, the state is distributing federal grant money to

build sewage pump-out stations at public marinas.

► Reef Restoration

In August, workers finished the first phase of a \$2 million reef restoration project by building new reef substrate at two sites off Key Largo. In the second phase, biologists will transplant seed corals to recolonize the areas that were reduced to rubble during two 1989 ship groundings. Costs of the experimental projects were covered by fines and penalties against the shipping companies. At press time, NOAA was negotiating similar damage fees against the University of Miami to pay for a third restoration project off Looe Key to repair damage from the 1994 grounding of the university's research ship Columbus Iselin.

► Everglades/Florida Bay The National Audubon Soci-

ety is asking Congress to stop its subsidy programs for sugarcane growers in the Everglades. Sugar production is blamed for diverting freshwater flow through the Everglades and dumping excess nutrients. As a result, water flowing from the Everglades into Florida Bay and ultimately into the Keys, is hypersaline and prone to algal blooms.

Edwin Moure of the Audubon Everglades Campaign says that without federal subsidies, Everglades sugarcane production would drop by about 30 percent, freeing land that could be converted to marsh. Such a conversion program would help filter and purify water flowing through the Everglades.

ATOC PROJECT

Testing, 1, 2, 3...

ising above the din surrounding the controversial ATOC project, scientists and environmental groups struck a deal. Instead of arguing what effects the experiment might have on marine mammals, they agreed to put the system to a test.

The Acoustic Thermometry of Ocean Climate project, originally scheduled to start in the summer of 1994, would emit a low-frequency hum (75 hertz) at 195

decibels (about the volume of an ambulance siren) from large underwater speakers located outside Monterey Bay National Marine Sanctuary and the Hawaiian island of Kauai. Because sound travels faster in warm water than cold water, the signal can precisely measure subtle temperature changes. But environmentalists fear it will not-so-subtly disturb mating animals or deafen whales and dolphins who use echolocation to hunt. (See "Now Hear This," RSD, July 1994.)

This fall, the Scripps Institution of Oceanography in San Diego turned its ATOC project over to biologists from the University of California at Santa Cruz. With their hand on the volume knob of the the world's largest stereo system, and their eyes and ears on ocean monitoring systems formerly used to track submarines, the biologists will regulate the volume and timing of the signals while analyzing the behavior of marine mammals for signs of stress. Study director Dan Costa says scientists will also record the abundance and

distribution of baleen and toothed whales, dolphins, elephant seals and sea turtles, while watching for noise-related changes in behavior.

Besides answering specific questions about ATOC, the study may also shed light on a bigger issue—the volume of human-generated sound pollution in the oceans, says Don Kroll, a mammalogist studying blue whales at U.C.-Santa Cruz. "If low-frequency sounds are a problem for these whales, who have evolved in the naturally noisy environment of the oceans, then the tremendous amount of constant noise pollution coming from ship traffic, oil rigs and explosive devices presents a far bigger problem than the relatively quiet ATOC signal."

—LANCE LEONHARDT

Reef Donations

merican Express Corporation is donating two cents to Key Vest-based Reef Relief for every purchase made on American Express or Optima cards in the Florida Keys through July 11, 1996. The company will donate a minimum of \$10,000 and a maximum of

\$15,000 to Reef Relief, which focuses on water-quality issues.

The Nature Conservancy is seeking donations for its reef conservation programs in the Florida Keys, the Dominican Republic and Palau through its Rescue The Reef program. For a \$35 contribu-

tion, donors receive a certificate, fact

sheets on reef projects and other goodies. All contributions are split equally among the three areas. In the Keys, donations are used to run volunteer reef monitoring programs in conjunction with the Florida Keys National Marine Sanctuary. For more infor-

mation, call (800) 84-ADOPT.

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NOVEMBER/DECEMBER . 13

SEAVIEW

PARADISE REEF

A Day In Court

pponents of a cruise ship pier being built over Cozumel's Paradise Reef are hoping for justice from both Mexican courts and the international and buy time for environmental organizations in Mexico, the United States and Canada to bring international pressure on the Mexican government through the North American Free Trade Agreement.

shame the Mexican government into revoking the permits, says Alexander Stone, executive director of Project ReefKeeper. "It becomes an international embarrassment instead of a national embarrassment—it becomes a whole new source of pressure."

Central to all three NAFTA complaints will be the

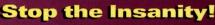
lawsuit, which highlights numerous flaws in the permits, including a scientifically questionable requirement that corals and sponges in the path of the pier be moved and replanted in adjacent areas. A videotape of the

replanting effort provided to RSD shows commercial divers grabbing corals and sponges from a milk crate and haphazardly placing them in bare sand. In one instance, a diver

sticks a small purple sponge in the sand, then swims away his fin wake lifting the unattached sponge and sending it tumbling through the water.

Mexican officials, however, show no sign of bending on the issue. Julia Carabis Lillo, now Mexico's secretary of the environment, was head of the NIE when the agency granted permits for the pier. In July, she was quoted in a Mexican newspaper as saying the pier "is not an ecological problem" and hinted that divers were a greater threat to Cozumel's reefs.

But Horn vows to keep fighting until the very end. While the corals can recover from damage inflicted during construction, they won't survive the daily silt storms from cruise ship propellers, he says. "It's the operations of the ships that cause the most damage. It's not over until the first ship docks there."



RSD is helping to collect donations to defray legal costs of the Mexican lawsuit. Checks in U.S. dollars should be made payable to Paradise Reef Legal Defense Fund and mailed to: Paradise Reef Legal Fund, clo Rodale's Scuba Diving, 6600 Abercorn St., Suite 208, Savannah, GA 31405.

Project ReefKeeper is collecting letters in opposition to the pier to use in support of its NAFTA complaint. Write to: Project ReefKeeper, Suite 162, 2809 Bird Ave., Miami, FL 33133, or call (305) 358-4600 for more information.

public opinion.

In late June, a Cozumel group called The Committee for the Protection of the Natural Resources sued the Mexican government to revoke the pier's permits. The lawsuit points out numerous flaws and inconsistencies in the permits granted by Mexican transportation officials and the National Institute of Ecology (NIE), says committee member and Cozumel dive operator Bill Horn. At press time, the Mexican government had until Sept. 15 to respond to the lawsuit before the judge considered a motion to delay construction while hearing the case.

If granted, the injunction would stop in-water construction early enough to avert the worst of the construction damage to the popular shallow reef Under NAFTA, the three countries established the Commission for Environmental Cooperation to police environmental policies. The Mexican Center for Environmental

Law is preparing a complaint to the CEC, as is Miamibased Project Reef-Keeper. The committee is seeking the help of Jean-Michel Cousteau to find a Canadian organization to also file a complaint.

Although the commission cannot fine or sanction Mexico, even if it finds the country violated its own environmental laws, the bad publicity of a trilateral NAFTA complaint might

Bulletins

NOV. 8-12: National Association of Black Scuba Divers Sixth Annual Dive Summit, at the Radisson Resort Hotel, Grand Cayman. For more information, call (800) 521-NABS.

NOV. 10-12: NAUI North Atlantic Fall Conference, in Mystic, Conn. For registration information, call Richard S. Norton at (203) 397-3066.

NOV. 11: Gales of November. Great Lakes shipwreck history and diving program at the Radisson Duluth in Duluth, Minn., sponsored by the Lake Superior Marine Museum Association. For more information, call (218) 727-2497.

DEC. 2-3: Seahunt Dive and Travel Show, at the Houston Astro Arena in Houston. For more information, call (713) 992-3530.

JAN. 12-17: TEK '96, technical diving trade show and diving clinics in New Orleans. For more information, call (305) 294-3540.

If there's an event you would like included in Bulletins, send all relevant information at least three months in advance to: Bulletins, *Rodale's Scuba Diving*, 6600 Abercorn St., Suite 208, Savannah, GA 31405. Or e-mail us at RSDmgzn@aol.com.



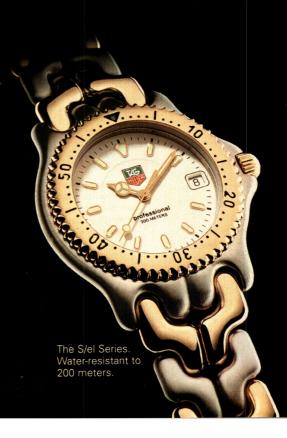


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Diving for Martians

t's probably safe to assume that no one has ever dived on Mars. But biologist Robert Wharton has come close. Every year, the researcher spends time in Antarctica, melting holes through the 20-foot-thick surface ice on the continent's glacial lakes and diving into the cold, dark water in search of anything living. Eons ago,

Mars also had lakes much like these, and since Wharton is discovering life in the Antarctic lakes, he and other scientists believe that life may have once existed on Mars as well.

"Mars is dry now, but its current landscape suggests it once had rivers and lakes," says Wharton, of the Desert Research Institute in Reno, Nev.

To learn more about these Martian paleolakes, Wharton is exploring several lakes in an area

of Antarctica called the dry valleys, a series of gores that remain almost barren because of strong winds that sweep away ice and snow. Except for lichens living in sandstone cracks at the surface, the only life in this harsh region are red, purple and gold patchwork quilts of microbes (bacteria, algae, fungi, protozoa) that blanket the lake bottoms. Wharton and his colleagues, the only people ever to dive the lakes, discovered the five-inch-thick microbial mats on their first dives in 1978.

To access the lake, Whar-

gas bubble columns and beautiful shades of blue and white," says Wharton. "Then you leave the ice and lose your frame of reference completely because it's so dark and you can't see the bottom. It's pretty eerie."

Wharton's 17 years of Antarctic study has proven at least one thing—the lakes are a sensitive indicator of the



BIOLOGIST ROBERT WHARTON DESCENDS THROUGH 20 FEET OF SURFACE ICE TO REACH THE WATER IN ONE OF ANTARCTICA'S GLACIAL LAKES.

tubing. Then a diver harnesses himself to a guide rope, penetrates through the ice and descends 30 to 100 feet into the water.

ton's team spends a

day melting a four-

foot-diameter hole

through the ice with a

hot coil of copper

"As you go down through the ice you see these frozen warming of Earth. Over time, the surface ice has thinned, and water levels have risen. But the galactic implications of Wharton's work need time to unfold. Some day, his research may provide tips to future Mars explorers about where to look for fossils and other evidence of life on the red planet.

—PAUL KVINTA



Bonaire Video Challenge

f Kevin Costner dares to make Waterworld II, he'd be wise to check out the underwater filming talents of the contestants in the 1995 Bonaire Underwater Video Challenge.

The contest for amateur videographers—sponsored by RSD, Ikelite, JVC and Scubapro—was judged by a panel including noted underwater cameraman Stan Waterman.

First-place winner Aldo Thomaz Jr., of São Paulo, Brazil, received a one-week, all-expenses-paid diving vacation to Sunset Resort on Bonaire. Chris Bloodwell of Bonaire won an Ikelite Marine Video System including a JVC Super VHS-C Camcorder for second place. Jorge Kawamura of São Paulo, Brazil, won a Scubapro Classic BC and G250 regulator for third place, while Leon Kline of Alexandria, Va., won a Scubapro wetsuit for fourth. Karlista Rickerson of Vashon, Wash., took home an Ikelite Aquashot camera housing for her fifth-place video.

Congratulations to all the winners, and thanks to these participating hotels: Capt. Don's Habitat, Sand Dollar Condimniums and Beach Resort, Sunset Beach Hotel and Divi Flamingo Beach Resort.

SCUBA DIVING

Here's your chance to speak out about what you liked and what you didn't about your most recent dive travel experience. Every issue of Rodale's Scuba Diving will include this tear-out card giving you the opportunity to tell us about your last dive vacation, from the dive staff's knowledge of dive sites, to the quality of food served on a liveaboard, to the comfort of the hotel where you stayed. Your ratings will be used as part of our coverage of dive destinations. Just return this postagepaid card with your responses; your name will be kept confidential.

How to use The Rodale's Scuba Diving Number System

- 1 = POOR. Wouldn't choose this operation/hotel/destination again.
- 2 = BELOW AVERAGE. Only so-so. Nothing to write home about.
- 3 = GOOD. Got my money's worth.
- 4 = ABOVE AVERAGE. Stands out from most others.
- 5 = EXCELLENT. Diving/dive travel at its best.
- NA = Not applicable
- Please check here if you don't want your comments forwarded to individual operators, hotels or resorts.

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TELL US ABOUT YOUR LAST DIVE TRIP

TELL US ABOUT THE DESTINATION				
DESTINATION (LIST SPECIFIC ISLANDS WHEN APPLICABLE, e.g., LITTLE CAYMAN) DATE OF TRIP				
1. Would you recommend this destination to a friend? Yes No				
2. Was the visibility: □ about what you expected □ more than you expected				
☐ less than you expected ☐ affected by bad weather				
3. Currents: ☐ Strong ☐ Moderate ☐ Weak				
4. Surface conditions: Challenging Moderate Mild				
I = POOR; 2 = BELOW AVERAGE; 3 = GOOD; 4 = ABOVE AVERAGE; 5 = EXCELLENT; NA = NOT APPLICABLE				
I 2 3 4 5 NA Abundance of fish, quantity and variety				
I 2 3 4 5 NA Abundance of big animals (sharks, rays, etc.)				
I 2 3 4 5 NA Abundance and condition of corals, sponges and other marine life				
I 2 3 4 5 NA Number and quality of walls				
I 2 3 4 5 NA Number and quality of wrecks				
I 2 3 4 5 NA Availability and quality of beach diving				
I 2 3 4 5 NA Value for your diving dollar				
I 2 3 4 5 How would you rate this destination overall?				
TELL US ABOUT THE DIVE OPERATOR OR LIVE-ABOARD				
NAME OF OPERATOR OR LIVE-ABOARD STATE/PROVINCE, COUNTRY				
1. Were you required to dive with a guide? ☐ Yes ☐ No				
2. If not, were guides available to you upon request? The Yes No				
3. Was the staff "dive computer friendly"? \(\sigma\) Yes \(\sigma\) No				
4. Was the staff "photography friendly"? Yes No				
5. Were you on a prepaid dive package? Yes No				
6. If so, how many dives were included per day? \square 2 tanks \square 3 tanks \square 4 tanks				
I = POOR; 2 = BELOW AVERAGE; 3 = GOOD; 4 = ABOVE AVERAGE; 5 = EXCELLENT; NA = NOT APPLICABLE				
1 2 3 4 5 NA Friendliness of dive staff				
1 2 3 4 5 NA Staff's effort to make your dive experience enjoyable				
I 2 3 4 5 NA Staff's willingness to let you manage your own dive profile, within reason				
I 2 3 4 5 NA Staff's knowledge and selection of dive sites				
I 2 3 4 5 NA Thoroughness of predive briefings				
I 2 3 4 5 NA Condition of boat(s)				
I 2 3 4 5 NA Space on board boat to gear up				
I 2 3 4 5 NA Amenities on board boat (i.e., sun deck, head, etc.)				
I 2 3 4 5 NA Tanks supplied fully pumped				
I 2 3 4 5 NA Quality and availability of rental gear				
1 2 3 4 5 NA Quality of dive facilities (i.e., dock, gear lockers, rinse tanks)				
I 2 3 4 5 NA Value for your diving dollar				
1 2 3 4 5 How would you rate this operator/live-aboard overall?				
Would you dive with this operator or live-aboard again? Yes No				

COMMENTS (ATTACH AN EXTRA SHEET IF NECESSARY)

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SECOND FOLD A PLEASE TAPE SHUT				
TELL US ABOUT THE LIVE-ABOARD BOAT				
1. How would you characterize the accommodations?	Primitive Simple comfort Excellent quality Superior or luxurious			
2. Was this your first live-aboard trip? Yes No				
I = POOR; 2 = BELOW AVERAGE; 3 = GOOD; 4 = ABOVE AVERAGE; 5 = EXCELLENT; NA = N				
I 2 3 4 5 NA Quality of food	I 2 3 4 5 NA Amount of fresh water on board			
I 2 3 4 5 NA Toilets that flush	I 2 3 4 5 NA Staff's boating skills			
I 2 3 4 5 NA Air conditioning	I 2 3 4 5 NA Staff's ability to handle an emergency			
	I 2 3 4 5 NA Photography services			
I 2 3 4 5 NA Shade on deck	I 2 3 4 5 NA Amenities (i.e., stereo, video, private baths			
I 2 3 4 5 NA Availability of charging ports for cameras	as, showers, etc.)			
lights, strobes, etc.	1 1 2 3 4 5 NA Overall condition of boat			
PERSONAL				
YOUR NAME AND ADDRESS (OPTIONAL)				
1. How many dives have you made since certification?	☐ Fewer than 50 dives ☐ 50-150 dives ☐ 150+ dives			
2. How many dive trips (including this one) have you made	le?			
FIRST FOLD				
TELL US ADOUT THE HOTEL/DECORT				
TELL US ABOUT THE HOTEL/RESORT NAME OF HOTEL/RESORT				
1. Through whom did you book this hotel/resort?				
	ocal dive retailer Directly through hotel Travel agent			
2. Would you stay here again? Yes No				
	☐ Primitive ☐ Simple comfort ☐ Resort quality ☐ Luxury			
4. Where was the dive operator located? •• On the proper				
5. If operator was not close by, was transportion to dive op				
1 2 3 4 5 NA Quality, variety and prices at on-site restaura				
I 2 3 4 5 NA Helpfulness of hotel/resort staff I 2 3 4 5 NA Quality of amenities (i.e., pool, sun deck)				
I 2 3 4 5 NA Friendliness of hotel/resort staff I 2 3 4 5 NA Ease of check-in/check-out				
1 2 3 4 5 NA Condition of rooms	I 2 3 4 5 NA Value for your diving dollar			
1 2 3 4 5 NA Condition of hotel/resort property 1 2 3 4 5 How would you rate this hotel/resort overall?				

Wild Things

Tucked in a corner of the western Caribbean are the incredible Bay Islands of Honduras – emerald islands rising from a turquoise sea. Just offshore are stunning coral gar-



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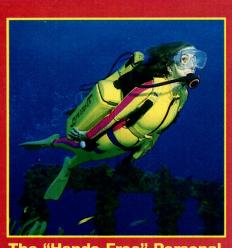
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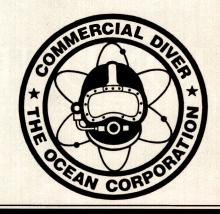
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Weekender

GRAY'S REEF

NATIONAL MARINE SANCTUARY

Neoprene lab coats and a 22-square-mile petri dish. Welcome to the Peach State's undersea laboratory. —By Unndór Jónsson

t's huge! Like a lump of dirt, the stingray lies motionless directly in front of me, keeping a suspicious eye trained on my next move. Apparently it's not completely at ease. Slowly it begins to arch its body and tail upward, preparing to lash at me with two thumb-thick stingers. Carefully, I inch my way to the other side of the massive ray, trying to get close and not spook it, when with almost supernatural simplicity, the stingray heaves its entire six-foot body out of the sand and flaps its wings effortlessly beyond the reach of the 25-foot visibility.

THE REEF

Seventeen nautical miles off the Georgia coast lies one of the largest and most accessible natural reef systems in the Southeast. Formed two to five million years ago by



DIVE IN

To protect the reef, NOAA limits activities in the sanctuary. Most forms of commercial fishing and the removal of live rock are forbidden.

Though popular with sport fishermen, the reef has yet to be discovered by recreational divers. Unpredictable winter weather limits scheduled charters, although fall can offer some of the best visibility and conditions. Water temperatures rise to 85F in the summer months and drop to the high 50Fs in winter.

Some boats can be chartered on an individual basis throughout the year, depending on the weather. Scheduled charters average \$70 to \$85 per person for two-tank dives and \$110 for three-tank trips, but charter prices can vary depending on the size of dive groups. Book trips well in advance.

Charter dive trips can be booked out of Tybee Island: Lazaretto Creek Marina, (912) 786-5848.

Scheduled trips: Brunswick: Hammerhead Dive Center, (912) 262-1778; St. Simons Island: Island Dive Center, (800) 940-3483.

For more information about the sanctuary, contact: Gray's Reef National Marine Sanctuary, 10 Ocean Science Circle, Savannah, GA 31411; (912) 598-2345.



TOUCH ME NOT: THE NOCTURNAL SPINY URCHIN'S INTIMIDATING SPINES HELP KEEP DIVERS OFF ONE OF THE SOUTHEAST'S LARGEST REEF SYSTEMS.

marine sediments, mud, silt and sand, and hardened by exposure above sea level during the Ice Age, Gray's Reef—like other live-bottom reefs scattered from Cape Hatteras, N.C., to Cape Canaveral, Fla.—consists of soft lime-

stone ledges and outcroppings rising as much as six feet off the sandy seafloor.

These limestone ledges are a haven for marine life on the barren sand plains off the Southeast coast. A solid foundation for marine organisms to attach to, the reef is blanketed with hard corals, gorgonians and sponges. Tropical, reef and predatory fishes—more than 150 species—congre-

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gate here for shelter and food.

Although the reef's ocean conditions are affected by the nearby Gulf Stream-75 nautical miles offshore—winter temperatures drop below the comfort zone of many tropical species, which either move out to warmer waters or die during the coldest months.

DIVING THE REEF

After a two-hour-plus boat ride, divers descending through bottle-green water are greeted at 55 feet with heavily encrusted ledges interrupted by flat-bottom sand troughs, crevices and gentle rocky slopes. Vase sponges, encrusting sponges, tunicates, sea whips and fans are the first forms to take shape while a closer look reveals reef residents going about their daily routine: a goatfish fights with a slippery dick, a Florida regal sea goddess shows off her haute-couture black-and-yellow mantle and feathery gills while sluggish sea cucumbers inch across the sand troughs.

Pelagics constantly cruise over and around the reef-some of which divers will rarely encounter closer to shore. Greater amberjacks and barracuda are commonly sighted, and sharp-eyed divers might spot Spanish and king mackerel cruising by at the edge of visibility. Sharks do visit the reef, but usually stay away from divers. Most commonly encountered are nurse sharks, which can be found resting under limestone ledges. Southern stingrays lie barely hidden in the sand patches surrounding the reef, and manta rays with 10-foot wingspans have been known to stop by for a thorough cleaning and to play a leading role in underwater videos.

Although far from shore, the depth at Gray's Reef maxes out at 50 to 65 feet. This relatively shallow depth and tropical to subtropical ocean conditions make reef fish the most plentiful fauna. Black sea bass observe divers warily, allowing close encounters only to the stealthy. The gag grouper is even more timid, flashing its yellowish-silver underbelly at a comfortable distance. Schools of Atlantic spadefish circle divers while sheepshead, cubbyu, gray triggerfish and burrfish seem oblivious to human presence.

Because the ledges and crevices conceal some of the reef's most interesting residents and because of limited visibility-ranging from 25 feet in winter to 60 feet in summer and fall-divers should bring a good dive light, even on sunny days. Crustaceans, octopuses, shy fish and even loggerhead turtles hide in the reef's dark recesses.



GRAY'S REEF PROVIDES SHELTER AND FOOD TO RETICULATE MORAYS AS WELL AS OCTOPUS AND LOGGERHEAD TURTLES ON AN OTHERWISE BARREN SAND PLAIN OFF THE GEORGIA COAST.

THE SANCTUARY

In 1981, Gray's Reef's 17-square-nautical-mile area was designated a national marine sanctuary and placed under the protection of the National Oceanic and Atmospheric Administration (NOAA). Scientists from NOAA, the University of Georgia's Marine Extension and the Georgia Department of Natural Resources and others are involved in taking fish counts, mapping the ocean bottom and educating the public about the reef and related marine life. Among the finds at Gray's Reef and nearby J Reef are mammoth and mastodon bones, evidence that the reef was dry land 20,000 to 40,000 years ago.

During the winter months, Gray's Reef is frequented by the northern right whale, and is believed to be a part of the only known calving ground in the world for this endangered species. Another endangered species, the loggerhead turtle, frequents the reef year-round, using it for shelter and feeding between nesting trips to the Georgia coast.

The importance of Gray's Reef does not lie in harvestable resources like oil or gas. Its value lies in the knowledge it imparts about our environment—knowledge we need to live in harmony with nature and its vast but limited resources.

RSD research associate Unndór Jónsson prefers the warm waters of the Georgia coast to those of his native Iceland.

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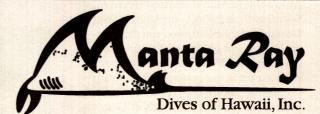
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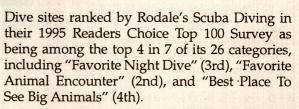
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OLYMPIC COAST

NATIONAL MARINE SANCTUARY

America's newest marine sanctuary offers a look at creatures great and small, from flatfish to gray whales—and a few guillemots in between. —By Brandon D. Cole

he steep undersea face of Tatoosh Island sweeps before me like a flower garden in full bloom: Christmas-bright sea anemones and sponges, crabs scuttling over clumps of raspberry soft coral. When a pair of eyes peer out from a crevice, I put on the brakes and backpedal for a closer look. Two suckered tentacles snake toward me and a Pacific giant octopus—the world's largest species and a wonderfully curious, harmless creature—flows liquidly from its den.

Waves of color wash over its body, which is first mottled brown with bumps, then shifts to smooth white, then to a dark red. I hold up a hand and wriggle my fingers in greeting. A single tentacle winds around my wrist, then tugs gently. I couldn't ask for a warmer welcome to the chilly emerald waters of the Olympic Coast National Marine Sanctuary, our nation's 14th and newest.

With boundaries that extend 25 to 40 miles offshore and stretch from the U.S.-Canadian border south for 135 miles, the Olympic Coast NMS is the nation's third largest, first in the Pacific Northwest, and home to a stunning array of wildlife both large and small. Some of the best diving is near the small town of Neah Bay, on the Makah Indian Reservation. Although nearby Tatoosh Island is suitable for divers of all levels, Duncan Rock, with its washing-machine surge and depths of 90 feet, is an advanced-only dive.

On both you'll find reef fishes like kelp greenling, rockfish and perch living along sheer walls and in the stands of kelp. Six-foot wolf eels slither about the boulder fields in search of sea urchin snacks. Lingcod, some over 50 pounds and with a set of dentures that would do a shark proud, stand guard over clutches of eggs. Flat, sandy plains border the rocky

outcroppings and provide a home to burrowing creatures like flatfish, sand dollars and sea pens.

Farther south down the coast is **Strawberry Rock**, a rarely dived and spectacular site that features invertebrate-covered ledges shelving down to 80 feet and impressive amounts of fish life. Past Cape Alava is what divers could justifiably call "terra incognito"—75 miles of coastline with hundreds of rocks, reefs and pinna-

NEAH BAY Taroosh Island SEKIU Duncan Rock Strawberry Rock Olympic Cape Alava National OLYMPIC Park PACIFIC COAST NMS OCEAN Cape Elizabeth U.S. 101 NEAH BAY ABERDEEN ASHINGTON



THIS RED IRISH LORD ENJOYS THE PROTECTION OF A MASTERFUL CAMOUFLAGE AND THE REGULATIONS OF THE NEWEST U.S. NATIONAL MARINE SANCTUARY.

DIVE IN

The best way to enjoy the Olympic Coast NMS is diving from a small boat. Most of the reefs are offshore and nearly all of the shore is difficult to access due to steep bluffs, treacherous beaches and thick forest growth. Hook up with a charter boat operator or bring your own boat to launch in either Neah Bay or Sekiu. You can also rent skiffs in Neah Bay. Caution: Most Olympic Coast diving is exposed to open-ocean conditions and strong tidal exchanges. Diving with a local operator or a buddy experienced in the area will ensure your safety and enjoyment.

Optimal diving conditions are usually in the fall and in between winter storms, when visibility can exceed 60 feet. During spring and early summer, plankton blooms are

likely to reduce vis to 15 to 20 feet. The water is cold year-round, averaging 53F. Heavy wetsuits or dry suits recommended. Dives are usually scheduled around slack water—the period between changes in current direction when water movement is at a minimum.

Modest accommodations are available in Neah Bay. For hardier types on a budget, camping is available throughout the area.

For more information on the sanctuary: Olympic Coast NMS, 138 West First St., Port Angeles, WA 98362; (360) 457-6622. Two dive operators serve the area: Curley's Resort and Sekiu Dive Center, Box 265, 291 Front St., Sekiu, WA 98381; (360) 963-2281, and Snow Creek Campground, P.O. Box 248, Neah Bay, WA 98357; (360) 645-2284.

cles virtually unexplored by divers.

You want big critters? Nearly 30 species of marine mammals ply the Olympic Coast waters. Pods of killer whales cruise the darkly forested shorelines. Gray whales are regularly sighted

inshore during their yearly migration from the Bering Sea to Mexico. Dolphins and porpoises own the open ocean and your boat's bow wave; seals and sea lions haul out on reefs and craggy headlands. And a true testament to the efficacy of marine protection: sea otters, once pushed to the edge of extinction, now bob and roll in the kelp forest's canopy.

The sanctuary's 870 offshore islands, remote reefs and rocks are also

home to an aviary of seabirds: gulls, murres, pigeon guillemots, rhinoceros auklets and tufted puffins, to name a few. The annual migration of transitory species brings millions of birds to this coastline, where bald eagles roost high in evergreens on the water's edge, peering

deep into the sea for a salmon meal swimming by.

The need to protect this vast underwater wilderness became all too apparent in 1988 and again in 1991 when two oil spills fouled the sensitive coastline. The



URCHINS, ANEMONES AND SEA STARS BRING TROPICAL COLOR TO CHILLY WATERS.

two spills, together with the 1989

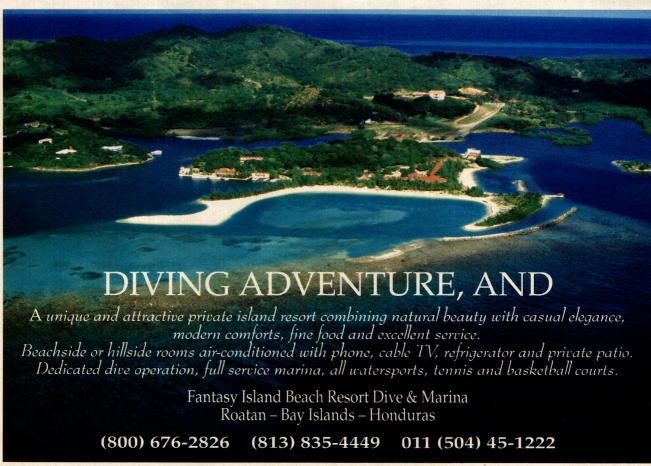
Valdez catastrophe in Alaska, pushed the Olympic Coast sanctuary proposal into the political spotlight as one way to head off potential disasters from the shipping of oil.

Former congressman Mike Lowry, now governor of Washington, provided the leadership that eventually led to official sanctuary status in 1994, after first being proposed more than a decade earlier in 1983. Support for the sanctuary came from all levels, federal, state, local and tribal. Four Native American tribes—the Hoh, Makah, Quileute and Quinault—have been linked with the Olympic Coast for millennia.

Prohibited activities in the sanctuary include bans on oil and gas development, tampering with historical or cultural artifacts, discharging or depositing any material, harassing marine mammals, sea turtles or seabirds. Recently, an internationally recognized "Area To Be Avoided" designation was approved, keeping commercial vessels carrying oil and other hazardous cargoes away from the fragile coast.

The sanctuary's "multiple use mandate" encourages activities that are compatible with resource conservation—including safe marine shipping, commercial and sport fishing, as well as low-impact ecotourism such as hiking, wildlife watching and, of course, scuba diving—in a true American frontier scheduled to stay that way.

Marine biologist, photographer and writer Brandon D. Cole lives in Spokane, Wash.

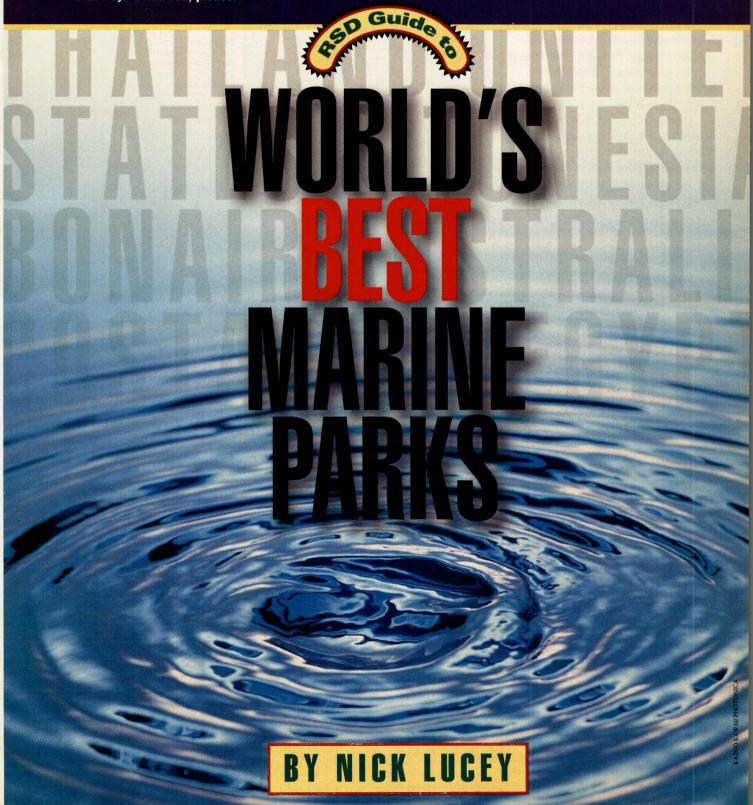


CIRCLE NO. 14 ON READER SERVICE CARD

arine parks—sacred spaces where humans pay homage to their marine heritage and life-giving force. Fortunately, our C-cards allow us to enjoy these places while others only dream about them. Landlubbers have their Yellowstones and Yosemites—we have our Bonaires and Bunakens.

Sounds fair enough, until you have to choose the world's finest and most sacred, which is no easy task. There are some remote parks that are as pristine as the day our species first trampled on this planet. And there are others that are fighting the good fight to keep their heads above water.

To narrow it down, we chose marine parks that meet three criteria. The park must be diveable, offer spectacular underwater scenery, and enjoy effective enforcement of marine conservation laws to keep it that way. Drum roll, please.



SCUBA DIVING / 2031/ NOV/ DEC 23

Location: The waters surrounding Bonaire and Klein Bonaire to a depth of 200 feet; in the southeastern Caribbean, about 50 miles north of Venezuela.

Designated: 1979

What's so special about it: Every inch of this arid island's shoreline is protected, from the pink flamingos of Washington-Slagbaai National Park in the north to the pink-sand beaches of the south.

What's going on: Bonaire was the first park in the Caribbean to charge an entry fee. A system of more than 70 mooring buoys and shore diving markers rings Bonaire and Klein Bonaire, a tiny, uninhabited islet off Bonaire's leeward coast. Park rangers and four boats patrol the park, provide information and enforce rules. Coastal zone management is targeted for future efforts.

Environmental Alert: The park is gearing up to defend Klein Bonaire from development by an Aruban firm. Marine park manager Kalli DeMeyer calls the development project a "major threat to the island's coral reefs."

For you it means: Shore diving on healthy reefs that guarantee lots of fish. Visibility often in the triple digits.

Prepare to pay: \$10 admission pass required; the pass is good for one year. **Don't even think about:** Spearfishing, removing anything alive or dead. Mooring buoy usage is strictly enforced.

Who's in charge: The Netherlands Antilles National Parks Foundation (STINAPA) and the Bonaire Marine Park • tel: 011-599-78444; fax: 011-599-78416.

CHANNEL ISLANDS

National Marine Sanctuary

United States

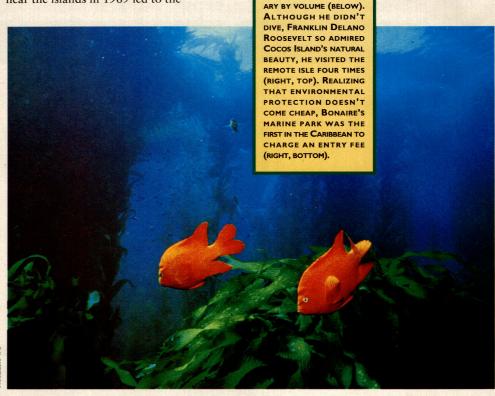
Location: From the beach to six nautical miles offshore of Anacapa, Santa Cruz, Santa Rosa, San Miguel and Santa Barbara islands, off Southern California.

Size: 1,658 square miles. **Designated:** 1980

What's so special about it: The Channel Islands NMS is, in essence, a submerged extension of the Channel Islands

National Park. This crossroads of warm and cold currents, plus nutrient-rich kelp beds, combine to spawn and support a wide variety of flora and fauna. More than 27 species of whales and dolphins can be found here.

What's going on: An oil platform spill near the islands in 1969 led to the



establishment of the sanctuary and spawned Earth Day, according to education coordinator Laura Gorodezky. Sanctuary staff sponsor educational programs in cooperation with the Santa Barbara Museum of Natural History. Projects include the Sea Center, an aquarium and marine education facility, and "Los Marineros," an education program for children. Other initiatives include an underwater photo shoot-out, educational cruises, monthly radio programs, kelp monitoring and fish identification seminars.

Environmental Alert: Oil spills from offshore drilling, water pollution and overfishing are potential threats to the Channel Islands' marine environment.

For you it means: Diving with five species of sea lions and seals. The chance to see endangered species such as the blue, humpback and sei whales, southern sea otter, Guadeloupe fur seal, California brown pelican and the California least tern. Prehistoric artifacts of the Chumash

Indians can be found on the seafloor, as well as more than 100 shipwrecks.

IN A BLUE HAYSTACK.

GARIBALDI DOT MONTEREY

BAY NMS, THE WORLD'S LARGEST MARINE SANCTU-

Prepare to pay: Nothing.

Don't even think about: Discharging sewage, disturbing marine mammals and birds, or removing or damaging historical or cultural resources, including shipwrecks and archaeological artifacts.

Who's in charge: Channel Islands National Marine Sanctuary (NOAA) • tel: (805) 966-7107; fax: (805) 568-1582.

COCOS ISLAND

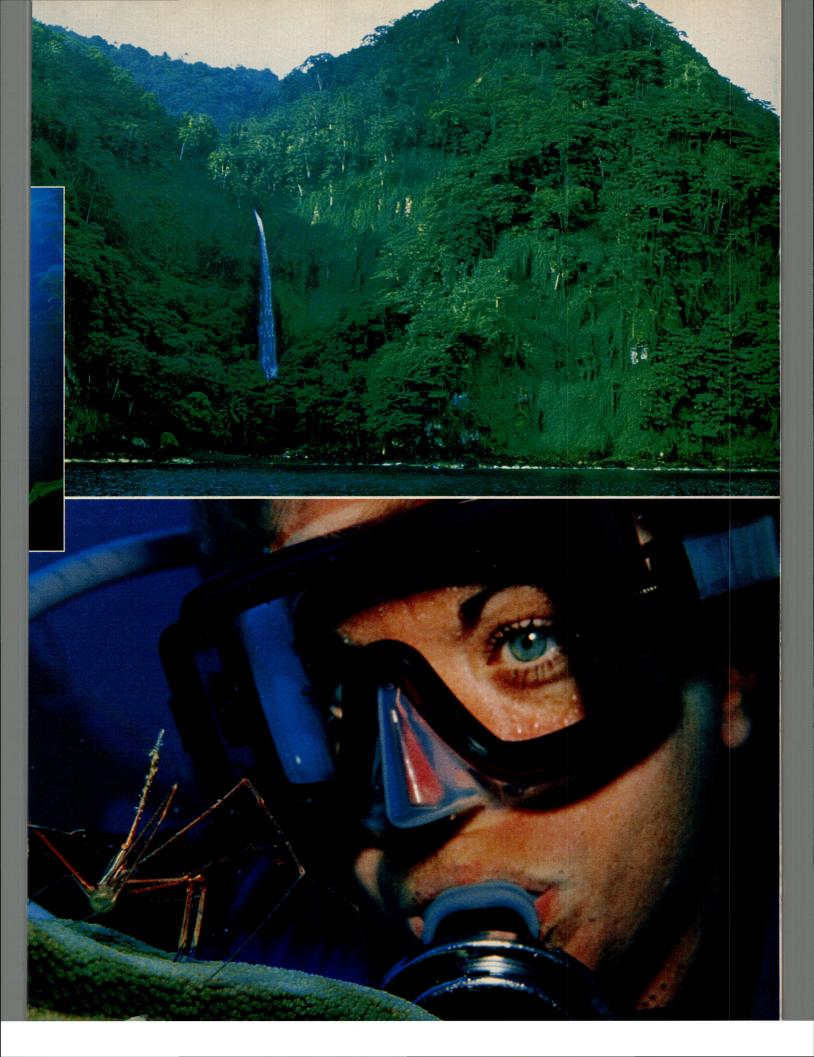
Marine Preserve

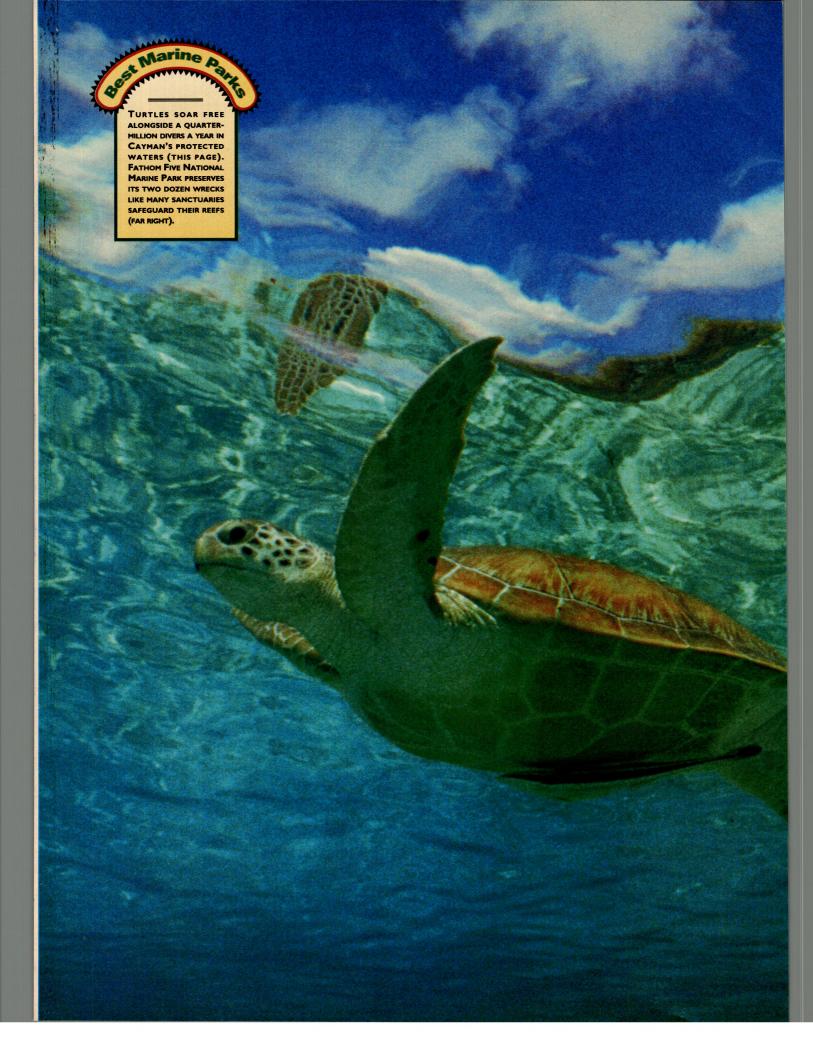
Costa Rica

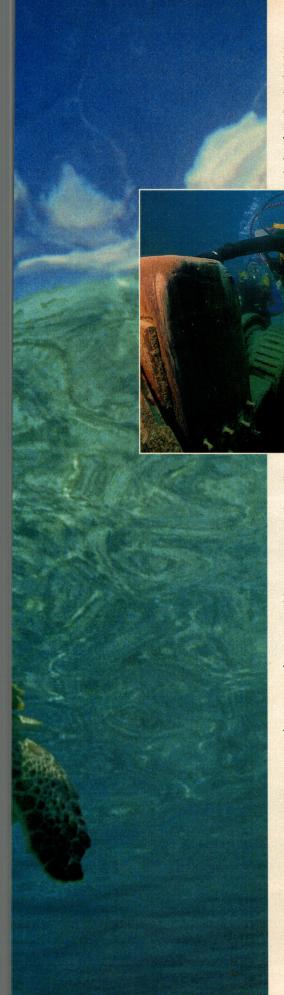
Location: Three hundred miles southwest of mainland Costa Rica, in the extreme eastern Pacific.

Size: 240,268 acres. **Designated:** 1992

What's so special about it: Cocos Island, in the same corner of the planet as the Galapagos and Malpelo, is the







largest uninhabited island in the world. Here, pinnacles rise from the depths of the Guatemala Basin to be washed by warm equatorial currents from the north and west and by the cool Peru Current from the south.

What's going on: Costa Rica has developed one of the most ambitious conservation programs in the world, with a focus

on preserving the country's biodiversity. A global volunteer program assists the island's 12 rangers with enforcement.

Environmental Alert:

While steps are being taken to protect
Cocos's waters, overfishing remains a major threat to the island's populations.

For you it means: The chance to dive with hammerheads, silky, white-tip reef and whale sharks, marbled

stingrays, manta rays, Moorish idols, tuna, barracuda, sailfish, marlin and green turtles. Remember, this is open-ocean diving. **Prepare to pay:** \$15 per person, per day. **Don't even think about:** Fishing.

Overnighting on the island is allowed only for park officials. The closest you'll get is a live-aboard bunk.

Who's in charge: Costa Rica National Park Service • tel: 011-506-257-0922, 011-506-257-2239; fax: 011-506-223-6063.

FATHOM FIVE

National Marine Park

Canada

Location: Off the tip of the Bruce Peninsula in central Ontario.

Size: 52 square miles. **Designated:** 1987

What's so special about it: Canada's first marine park and its most visited dive destination focuses its protection on wrecks rather than reefs. The waters of Lake Huron and Georgian Bay off Tobermory include more than 20 wrecks, protected by cool temperatures and unmolested by teredo worms.

What's going on: The Friends of Fathom Five and the Ontario Underwater

Council's leagues of volunteers play an active role in the preservation of the park by holding fund drives, conducting lake cleanups, building boardwalks and patrolling waters. Park officials constantly monitor deterioration of wrecks.

For you it means: Diving on well-preserved wrecks—some more than 100 years old—that are free of teredo worms and pilfering divers. Fascinating geological sites (thanks to the last Ice Age), including grottoes, caves and swim-throughs.

Environmental Alert: Zebra mussels are the biggest threat to the preservation of park wrecks, according to Don Wilkes, chief of visitor activities.

Prepare to pay: \$8 Canadian; the pass is good for one year.

Don't even think about: Removing, disturbing or damaging anything under water or on land in any way. All divers must sign in at the Diver Registration Center.

Who's in charge: Fathom Five National Marine Park • tel: (519) 596-2233; fax: (519) 596-2298.

GREAT BARRIER REEF

Marine Park

Australia

Location: Along the Queensland coast. **Size:** 215,000 square miles; slightly

smaller than Texas. **Designated:** 1975

What's so special about it: The Great Barrier Reef is the largest marine park in the world, established to protect the largest thing ever built by life on this planet. The park includes 2,900 reefs, 600 continental islands and 300 coral cays. Despite its immense size, the park is better managed and rules are better enforced than most parks a fraction of its size.

What's going on: The Great Barrier Reef Marine Park Authority's power to enforce zoning uses takes precedence over most local, state and federal legislation that might conflict with park goals, which maintain a sustainable balance between use and preservation.

Environmental Alert: Increasing nutrient levels and oil shipping are the biggest threats to the GBR.

For you it means: Having to choose what part of the reef you want to dive before you get to Australia. Live-aboards or long boat rides to remote and spectac-

ular reefs. A chance to see unique creatures such as the potato cod and the wobbegong, or carpet shark.

Prepare to pay: AUS\$1 per day.

Don't even think about: Littering or spearfishing with

power heads.

Who's in charge: The Great Barrier Reef Marine Park Authority (GBRMPA) • tel: 011-616-247-0211.

MONTEREY BAY

National Marine Sanctuary

United States

Location: Offshore central California.

Size: 5,300 square miles; if you're measuring by volume, the 10,000-foot-deep Monterey Canyon makes this the biggest marine park in the world.

Designated: 1992

What's so special about it:

Monterey Bay is the largest

U.S. national marine sanctuary. Among world marine parks, it is second in area only to the Great Barrier Reef. Monterey Canyon dominates the sanctuary's bottomography, plummeting almost two miles. Kelp and more than 1,200 wrecks carpet the sanctuary's seafloor, and sea otters, blue sharks, giant squid and whales enjoy the cold, nutrient-rich upwellings that bring in the big stuff during spring and summer.

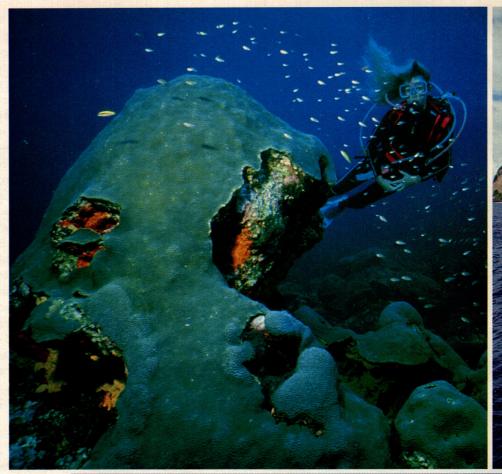
What's going on: So far, the NMS has not had to issue fines, only warnings for wastewater discharge. The focus of NMS protection is education and research.

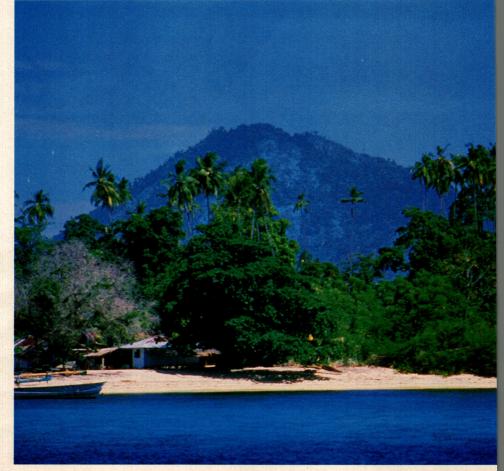
For you it means: Diving into the cold with sea lions, otters and kelp beds.

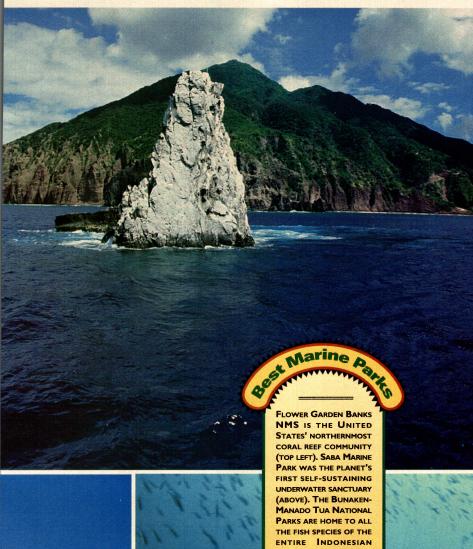
Prepare to pay: Nothing.

Don't even think about: Moving, removing or injuring any historical or natural resources (this includes wrecks) or taking or harassing any marine mammals, birds or sea turtles. You'll be slapped with a fine of up to \$100,000 for harassing marine mammals. Jet skis are allowed only in designated areas.

Who's in charge: Monterey Bay National Marine Sanctuary • tel: (408) = 647-4208; fax: (408) 647-4225.







SABA

Marine Park

Netherlands Antilles

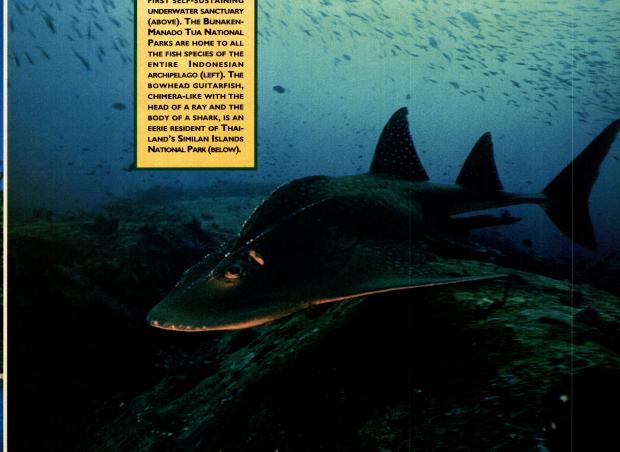
Location: In the Lesser Antilles, Eastern Caribbean; the waters surrounding Saba to a depth of 200 feet.

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Size: 2,149 acres. **Designated:** 1987

What's so special about it: Saba is the world's first self-sustained marine park—due to the collection of user fees, private donations and souvenir sales. Saba is the head of an enormous sea pinnacle, thrust almost 3,000 feet above the Caribbean surface.

What's going on: According to park manager Kenny Buchan, fish censuses from 1991 to 1995 show that island reef fish populations have increased 60 percent. Park staff monitors these fish as well as the health of benthic organisms, salinity, rainfall and temperatures, and conducts diver impact studies and sponsors coastal cleanups. The park's one boat can patrol the entire park in a half-hour.





Environmental Alert: Sedimentation from the island's steep shoreline is the biggest threat to Saba's reefs.

For you it means: Diving with blacktip reef sharks, schooling jacks and turtles on pinnacles covered in hard corals, gorgonians and sea fans.

Prepare to pay: \$2 per person, per dive. **Don't even think about:** Spearfishing,

conch or turtle collecting. All boats must use one of 32 mooring buoys and sportfishing is not allowed in the recreational diving zone.

Who's in charge: Saba Marine Park and the Saba Conservation Foundation, a nongovernmental organization • tel: 011-599-463295; fax: 011-599-463435.



ALSO STARRING

BUNAKEN-MANADO TUA

National Parks

Indonesia

The waters of the double park system harbor every species of reef fish that inhabits the 13,700-island Indonesian archipelago, the world's largest. The 236,626-acre park system was designated in 1986, thanks to the persistence of Loky Herlambang of the Nusantara Dive Center. Nutrient-rich waters from the depths of the Sulawesi Sea flow over the reefs. Expect to see steep coral walls covered with an array of soft corals. The surfaces of the walls are crowded with hard and soft coral, whip coral, sponges and clinging filterfeeders like crinoids and basket stars. Schools of pyramid butterflyfish and black triggerfish and schools of anthias swarm around the reef edges and the upper parts of the walls. Sharks, schools of barracuda, rays, moray eels, Napoleon wrasse and sea snakes are relatively common. Visibility hovers around 75 feet. Park law and tourist visits have encouraged fishing to stop in one sanctuary area on Bunaken Island. The taking of fish, coral or shells is punishable by a sixmonth imprisonment.

Environmental Alert: Overfishing, including dynamite fishing, poses a threat to the area's reefs.

CAYMAN ISLANDS

Marine Park

British West Indies

A series of marine park and replenishment zones cover about half of the Cay-

mans' shoreline. Marine park zones include offshore Seven Mile Beach, North West Point and Rum Point, Grand Cayman; the northwest, southwest and southeast shores of Cayman Brac; and Bloody and Jackson Bays and the southwest coast of Little Cayman. In these zones, the export of live fish or other marine life, damaging coral by anchor, chains or any other means and the dumping of raw sewage is strictly prohibited. Violation of these laws carries a maximum penalty of \$5,000 and one year in jail.

Environmental Assessment: A well-protected park that manages to support the large number of divers (250,000) who visit here each year.

FLORIDA KEYS

National Marine Sanctuary

United States

The Florida Keys NMS surrounds the second-longest protected reef system in the world after the Great Barrier Reef. The Keys are a meeting place for many warmwater and temperate species of fish.

The Key Largo and Looe Key national marine sanctuaries were the building blocks for the creation of the 220-milelong, 3,674-square-mile sanctuary in November 1990. Sanctuary initiatives include education programs, research and monitoring, and volunteer programs. Visibility hovers just under 100 feet; higher when the Gulf Stream makes a close pass. Water temps range from the low 70Fs in winter to the low 80Fs in summer.

Environmental Assessment: Park management plans have yet to be finalized. Increased nutrient levels and water

quality issues are being addressed.

FLOWER GARDEN BANKS

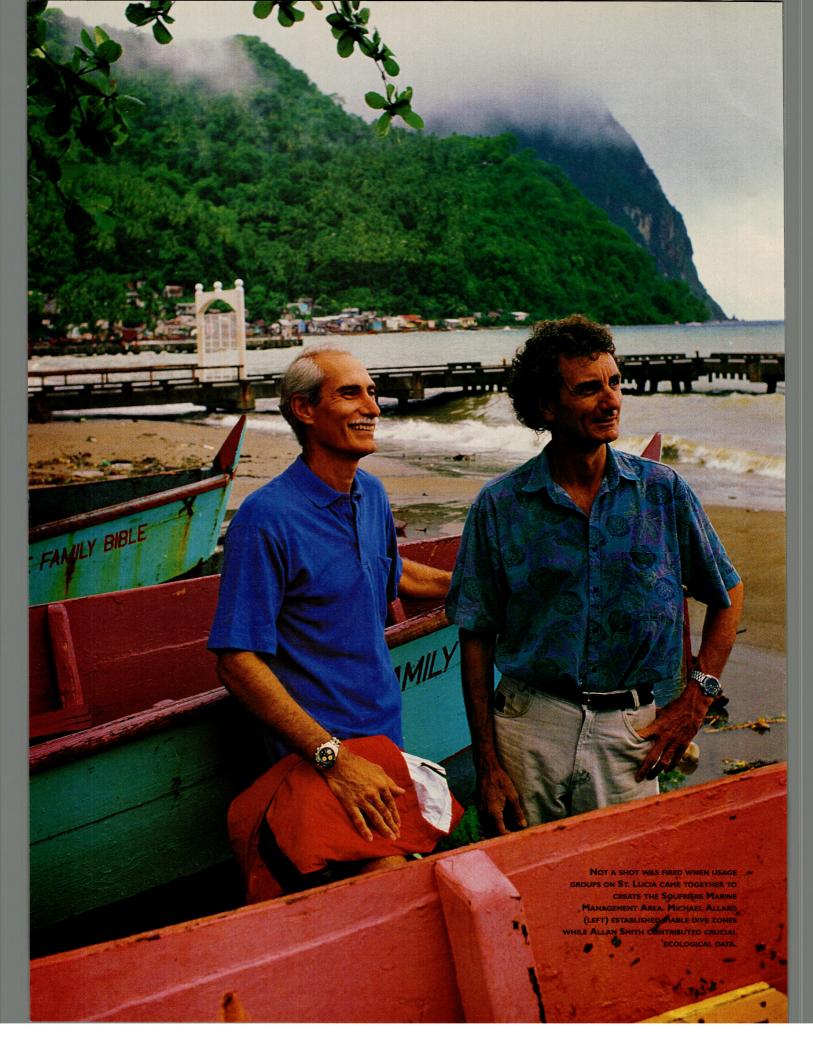
National Marine Sanctuary

United States

More than 100 miles south of Texas's Gulf coast, the Flower Garden Banks are the northernmost coral reef community in the United States. The 500-acre sanctuary supports 12 species of reef-building coral, 175 fish species and 253 varieties of invertebrates. The sanctuary is an openwater fish magnet, providing rare relief in the flat expanse of the Gulf of Mexico and drawing hammerheads January through March, manta rays and turtles in summer, and the occasional whale shark. Corals here spawn eight days after the August full moon every year.

Over the years, overfishing and anchor damage inspired the grassroots Gulf Reef Environmental Action Team to take action. They installed 12 mooring buoys without permission and, with support from the Houston dive community, helped the Banks gain designation as a national marine sanctuary on Jan. 17, 1992. Anchoring is allowed only for boats under 100 feet in length over sandy areas where no moorings are available. Boats longer than 100 feet can't anchor or moor anywhere. Conventional line and hook fishing only; spearguns, nets and longlines are strictly prohibited, and violators will incur a \$100,000 fine per infraction, per day. The best time to dive here is May through October, when seas are calmest and vis climbs to 150 feet. Water temps range from 64F to 72F.

Environmental Alert: Anchoring and overfishing (Continued on page 115)



Eco Hero

Faster than a speeding bureaucrat. More powerful than a polluting cruise ship. Able to perform turtle surgery with a single hand.

ou're perusing the menu in a Chinese restaurant when you see it-shark fin soup. You contemplate what it must taste like, the texture, the aroma. You know you shouldn't even consider it, given the world's declining shark populations, but you can't help it. You're curious. One little bowl wouldn't hurt, would it?

The next time you think that, remember the people profiled here, our eco-heroes. In their unique ways, these folks have each done their part to make the oceans safe for the rightful owner of that fin in the soup bowl, for all marine life, for humankind in general and for divers in particular. Some have liberated flailing creatures from fishing nets, while others have stared down megapolluters in court. One spent three lonely decades tagging along after the planet's largest animals, and still others have spent their significant political capital trying to keep environmental programs off the budget-cutting chopping block. Simply put, these people have displayed notable courage and vision, either over the course of a lifetime or over a few seconds of conscientious action-taking.

There are hundreds, even thousands of good people doing good work for the Earth's oceans. But we've selected this intriguing handful as representatives of the best spirit of environmentalism and individual activism. The next time you're contemplating that shark fin

By Paul Kvinta

soup, remember them.

Then order the egg drop.

THE SOUFRIÈRE MARINE MANAGEMENT AREA TEAM

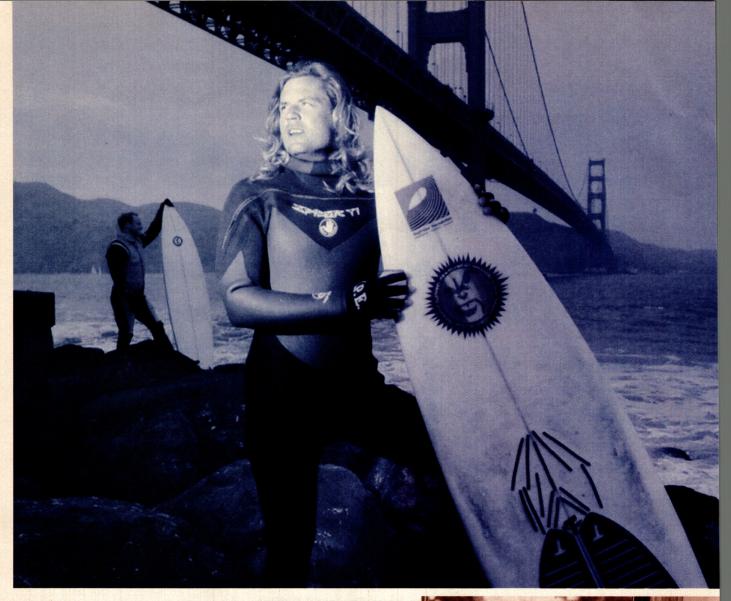
Can't we all just get along?

With dozens of marine sanctuaries and multi-use parks in the Caribbean and the United States, what makes the Soufrière Marine Management Area in St. Lucia so special?

"This is probably the only management area in the Caribbean that developed with the consensus of all the users," says Michael Allard, chairman of Anbaglo, the island's dive association. That may not sound impressive, but whenever the idea for a marine management area surfaces in a coastal community, the feuding that inevitably erupts among user groups typically resembles something just short of the Bosnian War. Fishermen feel left out. Environmentalists predict Armageddon. Insults are hurled. Things get ugly.

But the hopeful tone for Soufrière was set on the afternoon of Oct. 27, 1993, when—after a morning of rancorous screaming across a meeting room—a group of fishermen, divers, yachtsmen, biologists and others boarded two boats and puttered out along the coast. Then, as individuals cautiously began to share their knowledge of the sea with one another, tensions slowly dissipated. Divers identified spectacular reef sites. Fishermen divulged prized taking areas. Biologists pointed out delicate ecosystems. No one threw a punch, and no one cursed.

"We found there were actually few areas of contention," recalls Yves Renard, executive director of the Caribbean Natural Resources Institute (CANARI) and a key mediator in the process. "The exercise reversed quite a lot of attitudes." After two



years of tactful collaboration, the management area officially opened last July.

Now, as other islands eye St. Lucia's conflict-resolution approach to resource management, one can only hope they also find local leaders as competent as those who guided the Soufrière effort. Along with Renard's deft diplomacy and Allard's work on creating viable dive zones, the project received important political backing from people like Clem Bobb and Felix Finisterre, officials with the Soufrière Foundation who garnered support from government authorities and the local community. Allan Smith, a research coordinator and biologist with CANARI, contributed crucial ecological input, and Sarah George, a government fisheries official, looked after the island's fishing interest. J.T. Winstel, a representative of the French government—which financed much of the project—put in long hours as the management area's acting manager. Many others also pitched in—too many, unfortunately, to mention here.

The final question is, will it work?

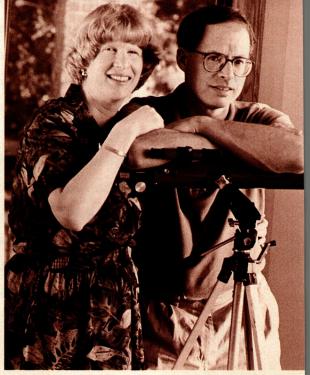
"We've already found that we need to modify some areas," admits Smith. "But the management of the area is flexible, just like the planning was flexible."

MARK MASSARA

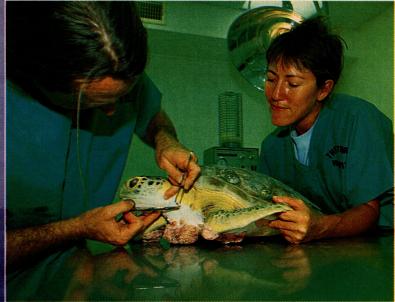
Dude. You got effluent on my board.

When San Francisco attorney Mark Massara squared off against Louisiana-Pacific Corp. and Simpson Paper Co. in 1989, some reports called the confrontation "Gidget vs. Goliath."

"Mark was this long-haired, blond surfer working out of his garage with a computer," recalls Rob Caughlan, then-president of the Surfrider Foundation.













"And he was up against a squadron of buttoned-down lawyers." Massara's well-documented contention? LPC and Simpson violated the Clean Water Act more than 20,000 times by regularly spewing toxic effluent into Humboldt Bay. Pinstripes and lapels ultimately couldn't hide that fact, and the companies finally agreed to pay \$5.8 million in fines, the second-largest penalty levied under the federal Clean Water Act.

"We didn't care about fines," says Massara, 34, who sued on behalf of Surfrider. "We made them spend tens of millions to improve their facilities. That's what we really wanted."

For Massara, founder of the Association of Surfing Attorneys and the Surfers' Environmental Alliance, the unlikely connection between battling monster waves and battling monster polluters was established early. When he was eight years old, his father took him to the beach in Santa Barbara to throw hay on oil washing up from a 4.5million-gallon spill by Unocal Corp. Then, in fifth grade, his homeroom teacher gave him his first surfboard.

"I've been surfing practically all my life," he says. "When I finished law school I just tried to figure out the

best way to use my degree to protect the environment I care about most."

Today, he does just that. As director of the Sierra Club's California coastal program, he monitors water pollution, coastal development and public beach access. In his spare time, he continues dragging polluters into court. He's currently wrangling with Unocal—the same company that spoiled the beach for him when he was eight—charging that the oil giant has spilled millions of gallons of oil at the mouth of the Santa Maria River, near the ecologically sensitive Nipomo Dunes. And these days, more conventional lawyers know to take the long-haired attorney seriously.

"The day before we filed our suit against Unocal," Massara snickers, "the state attorney general ran in and filed his own action against them. I guess he didn't want to be upstaged by a bunch of surfers."

TINA BROWN AND RICHIE MORETTI

Get me a shell patch! Stat!

"We don't have a bad connection!" turtle surgeon Tina Brown hollers into the phone as she slices a tumor off the flipper of a hawksbill turtle. "That noise is my cautery. I'm in the middle of surgery!"

Call it multi-tasking. Brown and partner Richie Moretti operate the world's only turtle hospital with a shoestring budget and no staff in Marathon, Fla. The two of them have to handle just about everything: answering emergency calls, patching damaged shells, racing up and down Highway 1 in their turtle ambulance, handfeeding 200-pound loggerheads too weak to care for themselves. "Turtles have amazing healing power," says Brown. "We just have to get to them in time."

The heroic thing about Brown, 38, and Moretti, 51, is that they've done so much with so little. In 1984, he gave up his VW repair shop in Orlando; she chucked her career as a hairdresser, and the two moved to the Keys where they transformed Fanny's Topless Lounge into the Hidden Harbor Marine Environmental Project. They also bought the Hidden Harbor Motel next door and turned its swimming pool into a 100,000-gallon saltwater rehabilitation pool for their reptilian patients. With meager proceeds from the motel and a smattering of donations, Brown and Moretti have rehabilitated turtles injured in boating accidents, entangled in fishing nets and stricken with disease. In nine years, they've treated more than 500 individuals.

But Brown and Moretti face a daunting problem—fibropapilloma, a tumor disease that has gripped 50 percent of the green turtle population in the Keys and is creeping into the loggerhead population. Cases from the Atlantic, Pacific and Indian oceans have been reported as well.

"The scary thing is that it's a stress-related disease," says Brown, "and pollution causes stress." Tumors that strike the external soft tissue are surgically removable; the ones that hit internal organs are always fatal. But there are those nearmiraculous success stories that fire up Brown and Moretti, like the case of Lumpy, a green sea turtle that arrived with tumors covering every inch of her soft tissue. In a half-dozen operations, the surgeons carefully removed the growths, and for four months fed her liquid food. After two years of rehab, Lumpy gained her release from the hospital and swam off into the ocean, a completely healthy turtle.

ALVIN LEVETT AND MARILYN HAMAR-LEVETT

Roll cameras. Action!

Shortly after 11:00 p.m. on Oct. 21, 1991, Alvin Levett and his wife, Marilyn Hamar-Levett, returned to their cabin aboard the Regal Princess cruise ship as it steamed north toward Fort Lauderdale, Fla. They'd just finished a fine seafood dinner, and as Alvin, a university administrator from West Bloomfield, Mich., and Marilyn, a physician, stepped onto the veranda for some fresh air, they heard the unmistakable sound of tin cans clanging together. Peering over the railing, they witnessed an arm hurling plastic garbage bags from the ship's galley into the sea.

"I didn't know at the time if this person was violating any legal or ethical standards," Levett recalls, "but it sure violated my ethical standards."

Springing to action, Marilyn fetched the video recorder, and Alvin filmed about five minutes of the bags being lobbed into the water while he gave a running commentary of the spectacle. "The ship is near Duck Key," he carefully reported into the microphone. "It's about 11:15 p.m. I can hear the sound of cans and bottles."

Fearing possible repercussions, the Levetts then locked the tape in a safe in their room and headed up on deck to question the highest-ranking officer they could find at the midnight buffet. "This one guy said the ship incinerated everything," says Levett, who concealed his discovery from the officer. "Then he shuffled his feet a little, and suddenly his English wasn't so good."

REP. SAM FARR (LEFT) AND WHITE HOUSE CHIEF OF STAFF LEON PANETTA ARE CONSCIENTIOUS OBJECTORS IN A WASHINGTON-SPONSORED WAR ON NATIONAL MARINE SANCTUARY BUDGETS.

The couple reported the incident to the U.S. Coast Guard when they arrived in Florida and later discovered through their own research that the cruise liner had probably violated the MARPOL Treaty, an international convention banning the dumping of plastics from ships. After months of badgering uninspired Coast Guard officials, the Levetts went public, appearing on NBC's "I Witness Video" in April 1992. Within days, the Coast Guard contacted the Justice Department, and criminal proceedings began against Princess Cruise Lines. The company pleaded guilty one year later and forked over \$500,000 in fines, half of which, by law, went to the Levetts.

"Congress put that incentive in the law because they need citizens' help to enforce the treaty," Alvin Levett says. "People tell me there are lots of folks hanging their fannies over the ship rails these days and holding video cameras."

X LEON PANETTA AND **SAM FARR**

Passing the torch.

Last July, with the U.S. House of Representatives slicing and dicing government programs, ocean lovers were fortunate to have Rep. Sam Farr (D-Calif.) around for damage control. During an assault on the 1996 national marine sanctuaries budget—the House initially whacked it from \$12 million to \$9 million—the congressman quietly located \$2 million in unallocated fisheries grants, stepped to the House floor and proffered an amendment adding those funds to the sanctuary program. The amendment passed.

"It makes economic sense," explains Farr, whose district includes the Monterey Bay National Marine Sanctuary. "The sanctuaries attract people from all over

> the world. Tourists, ... artists, musicians. People derive inspiration from § the sea."

Of course, the sanctuary program works mostly because it is a local, grassroots affair its heroes are the hundreds of local officials, environmentalists, sanctuary employees and users who unite daily to protect the nation's 12 designated preserves. But in an era when federal budget-cutters have pinned a bull's-eye on the environment, it's refreshing to know that some Washington politicians refuse to pull the trigger. And, as home to the nation's largest marine sanctuary-Monterey Bay-California's seventeenth district seems to be a wellspring (Continued on page 100)



RODALE'S SCUBA DIVING

Make a Difference



A Year's Worth of

VOLUNTEER DIVES

Want to do more under water than just blow bubbles? Want to combine the desire to travel with the desire to help? Here's a year's worth of volunteer diving opportunities, from one-day reef clean-ups to multiday trips to observe nocturnal coral spawns or establish research stations on remote islands.

Your investment of time, money and plain old hard work in these projects benefits all of us—divers and nondivers alike—who call this water planet home. And the results are tangible: healthier reefs, better-understood marine life and a lasting gift to future generations. —COMPILED BY PAT WUEST



JANUARY

BELIZE BIODIVERSITY RESEARCH PROGRAM

Oceanic Society Expeditions MISSION: To collect data on fish abundance and coral diversity and abundance to determine reef health at Blackbird Caye in the Turneffe Atoll. Establish a database for assessing underwater research methods and trends in coral cover and fish abundance.

WHAT YOU'LL DO: After receiving on-site training in marine ID and habitat, volunteers count fish, determine coral and algal cover, and measure fish.

DATE AND COST: Jan. 7-13, Jan. 14-20 and Jan. 21-27, 1996. \$1,775 (includes airfare from Miami or Houston) or \$2,060 (includes airfare from Los Angeles).

INCLUDES: On-site training, accommodations and meals, diving and oceanographic research diver certification.

PREREQUISITES: Proof of certifica-

WHY DO IT: This is a seascape worth escaping to, and deserving of the research attention.

FEBRUARY

BELIZE BIODIVERSITY RESEARCH PROGRAM

Oceanic Society Expeditions Feb. 11-17, 1996.*

MARCH

PROJECT REEF SPAWN '96, I

Oceanographic Expeditions MISSION: Observe and docu sponge spawning and cond oceanographic testing.

WHAT YOU'LL DO: Be a Peepi Tom and advance invertebra zoology at the same time. Som Caribbean reef sponges release clouds of sperm to be swept toward other same-species sponges, in a scattershot form of reproduction. Voyeuristic volunteers are needed to observe this

mass spawning, take photographs, conduct a reef-fish census and clean up the reef.

DATE AND COST: March 15-22, 1996. Cost to be determined at a later date.

INCLUDES: Transportation, accommodations, breakfast and dinner, oceanographic research diver certification, tanks and weights, scientific gear, membership in the Reef Environmental Education Foundation.

PREREQUISITES: 25 logged dives (including at least three night dives); underwater photography/video skills helpful.

WHY DO IT: The oceanographic and biological data you'll be collecting will become the baseline standard that scientists and institutions will use in their research.

BELIZE BIODIVERSITY RESEARCH PROGRAM

Oceanic Society Expeditions March 18-24, 1996.*

APRIL

Oceanic Society Expeditions diversity and establish a species population baseline in the Bay Islands.

duct visual surveys and map and assess species abundance and population percentages.

DATE AND COST: April 6-13, 1996. \$1,735 (includes airfare from Miami or Houston) or \$1.965 (includes airfare from Los Angeles).

INCLUDES: On-site training in coral species ID, accommodations and meals

PREREQUISITES: Proof of certification. Underwater photography experience helpful.

WHY DO IT: The baseline data you'll be collecting is critical to monitoring the effects of development on the marine environment in the Bay Islands.

BELIZE BIODIVERSITY RESEARCH PROGRAM

Oceanic Society Expeditions April 1-7, April 7-13 and April 14-20, 1996.

PROJECT REEF SPAWN '96, BELIZE

Oceanographic Expeditions April 11-18, 1996.*

MAY

MAUI'S THREATENED REEFS

Earthwatch

MISSION: To conduct baseline fish and coral surveys and document present diversity to compare to future baseline censuses.

WHAT YOU'LL DO: Dive twice a day in shallow water off Maui, Kahoolawe and Lanai. Document fish and coral species every 16 feet along a 165-foot transect.

DATE AND COST: May 1996 (from 10 days to two weeks). \$1,795. INCLUDES: Food and lodging in Kihei, snorkeling trip and staff

PREREQUISITES: Divers only. WHY DO IT: If this is Paradise, then the Garden is in trouble: Reefs along the western Maui coastline are stressed from human activity, including snorkeling and diving. Scientists are anxious to know if the reefs can recover and what strategies can be employed to protect this ecosystem.



SAVING CHINA'S REEFS

Earthwatch

MISSION: To study the relationships between fish and coral of the threatened reefs off the Hainan Province.

WHAT YOU'LL DO: Volunteer time will be split between gathering field data, classifying sampled specimens and helping in data reduction.

DATE AND COST: May 1996 (from 10 days to two weeks). \$1,695. INCLUDES: Food and lodging. PREREQUISITES: Divers only. Computer programming skills a plus. WHY DO IT: This is one of Earthwatch's newer projects. Scientists are working to determine the sources of pollution threatening these reefs.

BRITISH VIRGIN ISLANDS FIELD SURVEY

Reef Environmental Education Foundation

MISSION: To educate recreational divers in marine life ID and underwater surveying skills in order to build and maintain a marine life biodiversity database for reef ecosystems and to act as a support network of underwater observers for scientific, environmental and management concerns.

WHAT YOU'LL DO: Two survey dives each afternoon and two optional night dives, recording identified species and sketching and taking notes on unidentified species. After each dive, you'll transfer sighting data to a computer scansheet.

DATE AND COST: May 4-11, 1996. Cost to be determined.

INCLUDES: Training programs on marine life ID and habitat, meals and accommodations.

PREREQUISITES: Certified divers with open-ocean experience.

why do it: This is a dive vacation that counts—you count the fish, and your endeavor counts toward a larger effort to complete wide-scale mapping and monitoring of fish diversity in the Caribbean.

GRAND CAYMAN FIELD SURVEY

R.E.E.F. May 18-25, 1996.*

St. CROIX FIELD SURVEY

R.E.E.F. May 25-June 1, 1996.*

PROJECT REEF SPAWN '96, ROATAN

Oceanographic Expeditions May 10-17, 1996.*

Year-round Volunteer Dives

Volusia County Reef Research Dive Team

Volusia County Dive Team

MISSION: To develop the county's artificial reef program, which takes pressure off Florida's natural reefs, for divers and sportfishermen.

WHAT YOU'LL DO: Record habitat information on the eight existing reefs 10 to 15 miles off the coast of Daytona Beach. Team members also help determine suitability of new sites for artificial reefs.

DATE AND COST: Team meets monthly from January to October to plan its monthly schedule. The

required training course costs approximately \$200, and will be offered sometime in winter 1996. Dive trip costs are reimbursed after the team turns in reports to the Army Corps of Engineers

PREREQUISITES: Openwater certification and completion of diver training course, which includes training in scientific monitoring, use of 35mm camera, two freshwater training dives and two offshore trips.

WHY DO IT: The concrete culverts, scuttled boats and Army tanks

may be imitation reef substrate, but there's nothing fake about the marine life that sets up housekeeping on artificial reefs. Data collection depends on local volunteers.

Palm Beach County Reef Research Team

Florida Oceanographic Society

MISSION: To collect data on both natural and artificial reefs off Florida's Palm Beach County and to make the information available to the scientific community. To develop educational programs that increase the public's awareness and enhance understanding of the reef environment.

WHAT YOU'LL DO: Assist in surveys prior to deployment of new artificial reefs and map and monitor existing ones. Tasks include taking fish censuses, underwater mapping and underwater video.

pate and cost: Team meets the third Wednesday of each month and dives on the Saturday following the meeting. Dives are \$10 for members, \$25 for nonmembers. To join the team, a diver must join the Florida Oceanographic Society (\$40/year) and pay a one-time training fee of \$60.

PREREQUISITES: Advanced open-water certification (most dives are deep—80 to 100 feet—and on wrecks). All research divers must complete a six-session training program (six classroom sessions and six dives) that teaches scientific methodology, physical

data collection, underwater mapping, biological sampling and fish ID.

WHY DO IT: Florida's reef research dive teams are made up of a loose network of volunteers who have taken responsibility for upkeep of the state's reefs. If you live in or near Palm Beach County, you can volunteer close to home.

The Philippines Reef and Rainforest Project

Coral Cay Conservation

Start Here and Now

You don't have to go on expeditions to

far-flung corners of the world to help

recycling, buying recycled products and

not throwing anything overboard from a

buying organic foods grown without

chemical fertilizers or pesticides that hurt

coastal habitats and over-nutrify the oceans

► not purchasing shell or coral products,

save our oceans. Start now by:

conserving water to lessen sewage

reusing containers

boat or on a beach

especially black coral

MISSION: To establish a field research center on Dan-

jugan Island to facilitate research, education and training programs. The Philippine Reef and Rainforest Foundation has purchased the island and wants to develop a management plan to protect the island's natural resources on a sustainable basis.

WHAT YOU'LL DO: Conduct marine surveys around Danjugan Island and work alongside Filipino volunteers and marine biologists.

DATE AND COST: Presently ongoing; dates and costs for 1996 expeditions were not available

at press time.

INCLUDES: Cost will include airfare, meals and accommodations.

PREREQUISITES: Certified divers, preferably advanced open-water.

WHY DO IT: Because if you don't, you'll miss more than 500 species of soft and hard corals, 2,400 varieties of fish, thousands of shellfish species and five species of marine turtles.

The Great Atlantic Barrier Reef of Belize

Coral Cay Conservation

MISSION: To survey the reefs, lagoons and islands of Turneffe Atoll and the Belize barrier reef and develop an integrated national coastal zone management plan to protect critical marine habitats and ensure that fishing and tourism are monitored and controlled on a sustainable basis.

WHAT YOU'LL DO: Take marine surveys throughout Turneffe Atoll, assist in the development of the University College of Belize's Marine Research Center, help train Belizean students and maintain the expedition campsite.

DATE AND COST: Monthly departures: I month, \$2,250; 2 months, \$3,720; or 3 months, \$4,650.

INCLUDES: Transportation, meals and lodging (excluding airfare to and from Belize).

(Continued on page 99)



JUNE

CARIBBEAN SHIPWRECK

Earthwatch

MISSION: Underwater archaeological dig on a 17th-century vessel off the coast of the Dominican Republic to determine its origin, and reasons for its journey and

WHAT YOU'LL DO: Archaeological digs are not as glamorous as Raiders of the Lost Ark-the work is methodical and often painstakingly slow. You'll retrieve artifacts, and analyze, identify and catalog cargo. Expect to spend three hours a day under water and three hours in the lab. You'll sort artifacts, record observations, and enter data in the permanent field notebook, including sketches and detailed measurements.

DATE AND COST: June 1996 (from 10 days to two weeks). \$1,695.

INCLUDES: Camp on Cabra Island in two-person tents, and experience the thrills of sun shower bags and pit toilets. Food is included, but you'll do the grocery shopping.

PREREQUISITES: Equal employment opportunity: Divers and nondivers needed.

WHY DO IT: This is "Mystery Underwater Theater": Where did the Monte Cristi "Pipe Wreck" come from? Was it involved in the black market trade of the 17th century? Why did it sink in only 16 feet of water?

MAUI'S THREATENED REEFS

Earthwatch June 1996 (from 10 days to two weeks).*

SHARK BIOLOGY, WALKERS CAY, BAHAMAS

Oceanographic Expeditions MISSION: Looking for an expedition that's a little on the wild side? Try field research on blacktip and Caribbean reef sharks.

WHAT YOU'LL DO: Observe shark behavior and conduct oceanographic testing.

DATE AND COST: June 7-11, 1996. Cost to be determined.

INCLUDES: Transportation, accommodations, breakfast and dinner, tanks and weights, scientific gear, membership in the Reef Environmental Education Foundation.

PREREQUISITES: 25 logged dives (including at least three night dives); underwater photography/video helpful.

WHY DO IT: The elasmobranch vacation video will excite even your neighbors. Plus, you get to contribute data necessary for a better understanding of shark movement, migration and behavior to enable informed shark management plans and quotas for shark fisheries.

BELIZE BIODIVERSITY RESEARCH PROGRAM

Oceanic Society Expeditions June 16-22, June 23-29 and June 30-July 6, 1996.*

BONAIRE FIELD SURVEY

R.E.E.F.

June 1-8, 1996. This expedition requires prior field survey participation or extensive survey experience.*

Volunteer Directory

Phone numbers of organizations seeking volunteers.

CEDAM INTERNATIONAL (914) 271-5365 CENTER FOR MARINE CONSERVA-TION (813) 895-2188 011-44-171-498-6248, (305) 945-6789

EARTHWATCH (800) 776-0188, (617) 926-8200 FLORIDA KEYS NATIONAL MARINE

SANCTUARY (305) 743-2437 MARINE CONSERVATION NETWORK (510) 838-2544

OCEANIC SOCIETY EXPEDITIONS (800) 326-7491, (415) 441-1106 OCEANOGRAPHIC EXPEDITIONS (504) 488-1573 OCEAN WATCH (305) 467-1366 PALM BEACH COUNTY REEF RESEARCH DIVE TEAM (407) 624-9553 REEF ENVIRONMENTAL FOUNDATION (305) 451-0312 REEFKEEPER INTERNATIONAL (305) 358-4600

VOLUSIA COUNTY REEF RESEARCH

DIVE TEAM (904) 677-2828

KEY LARGO FIELD SURVEY

R.F.F.F. June 15-22, 1996.*

TURKS & CAICOS FIELD SURVEY

R.E.E.F.

June 29-July 6, 1996.*

REEF SWEEP, BROWARD COUNTY, FLA.

Ocean Watch

MISSION: Clean up reefs off South Florida's Broward County.

WHAT YOU'LL DO: You'll be a reef sanitation engineer. Last year, volunteers hauled nearly 3,000 pounds of garbage off the reefeverything from boat batteries to a wheelchair.

DATE AND COST: June 8, 1996. Volunteers make their own arrangements with local dive operators to get out to the reefs.

WHY DO IT: This is a no-brainer. Debris hurts the reef. Fabric and plastic smother soft corals and kill fish. Batteries leech harmful toxins. Wheelchairs, grocery pushcarts and other heavy items break fragile coral heads.

JULY

MONITORING FIJI'S REEFS

Farthwatch

MISSION: To monitor the feeding and social behavior of Great Astrolabe Reef butterflyfish and develop a reef damage early detection program on Dravuni Island.

WHAT YOU'LL DO: Dive twice a day and take censuses of butterflyfish, observe feeding behavior, measure territory sizes, quantify coral abundance and produce maps of study area. Be prepared to observe Fijian law and custom, including attending church.

DATE AND COST: July 1996 (from 10 days to two weeks). \$1,995. INCLUDES: Food and lodging at the field station on Dravuni and instruction on work and methodology.

PREREQUISITES: Divers only.

WHY DO IT: There are no cars, no pollution and no noise. It's hoped that observations of the butterflyfish feeding and social behaviors on this pristine reef-their foraging territory is related to the area of healthy coral availablewill lead to early detection of reefs in trouble.

MAUI'S THREATENED REEFS

Earthwatch

July 1996 (from 10 days to two

weeks).*

CARIBBEAN SHIPWRECK

Farthwatch.

July 1996 (from 10 days to two weeks).*

GREAT AMERICAN

FISH COUNT

Marine Conservation Network. Channel Islands and Monterey Bay National Marine Sanctuaries, and National Biological Service MISSION: An annual volunteer fish census in California's Channel Islands and Monterey Bay National Marine Sanctuaries that supports monitoring programs of the National Biological Service while promoting public education and awareness of our ocean environment.

WHAT YOU'LL DO: Dive teams conduct the census using underwater slates and transfer the information to standardized data forms for tabulation. Volunteers are also needed to organize training seminars, promote the event and help summarize the results.

DATE AND COST: The first two weeks in July. Seminars and training sessions begin in May and June. Free if program receives funding; otherwise, no more than \$15.

INCLUDES: Training seminar, Tshirt and survey materials.

PREREQUISITES: Certified divers, snorkelers and free divers.

WHY DO IT: Make your dives count! Results are available to participants, the scientific community and the public. The National Biological Service tabulates the results.

GUIDEBOOK PROJECT: AKUMAL, MEXICO

CEDAM International

MISSION: To document the marine life around Akumal for a guidebook that will be donated to the Akumal Ecology Center.

WHAT YOU'LL DO: Volunteers will photograph marine life and take notes on the habitat.

DATE AND COST: July 8-13, 1996. Approximately \$800 (does not include airfare or transfers to Akumal).

INCLUDES: Photo instruction and mini-seminars on local fish and coral identification.

PREREQUISITES: Photographic experience and writing skills helpful, but not necessary.

WHY DO IT: The name says it all. CEDAM—Conservation, Education, Diving, Archaeology, Museums-conducts expeditions on a number of fronts and, appropriately, marine scientists from a number of fields use the findings in their work.

MONTEREY BAY BIODIVERSITY AND MONITORING PROJECT

Oceanic Society Expeditions MISSION: To conduct long-term subtidal biodiversity and monitoring of the Monterey Bay National Marine Sanctuary.

WHAT YOU'LL DO: Divers conduct video and still photo transects, and catalog plants and animals on underwater data forms.

DATE AND COST: July 25-28, 1996. \$280.

INCLUDES: Habitat education, including local marine life ID and monitoring handbook.

PREREQUISITES: Proof of certification

WHY DO IT: Be an underwater cartographer: the goal is to map habitats inside and outside of marine protected areas in order to assess fish abundance.

BELIZE BIODIVERSITY RESEARCH PROGRAM

Oceanic Society Expeditions July 28-Aug. 3, 1996.*

SHARK BIOLOGY, WALKERS CAY, BAHAMAS

Oceanic Society Expeditions July 1-7, 1996.*

DOMINICAN REPUBLIC FIELD SURVEY

R.E.E.F. July 13-20, 1996.* KEY WEST FIELD SURVEY

R.E.E.F. July 20-27, 1996.*

AUGUST

PROJECT REEF SPAWN '96 (FLOWER GARDEN BANKS; KEY LARGO; ROATAN; WALKERS CAY, BAHAMAS; BONAIRE)

Oceanographic Expeditions MISSION: To observe and document coral spawning.

WHAT YOU'LL DO: Partake in a mass spawning ritual and help answer questions still nagging scientists: What triggers are necessary for mass spawning? Where do the larvae go? Is spawning in other species-for example, Christmas tree worms and brittle stars have been observed spawning at the same time as the coral in the Flower Gardens-related to coral spawning?

Plus, collect spawning samples, photograph the reef, count fish and clean up the reef.

DATE AND COST: Aug. 2-8 and Aug. 31-Sept. 6, 1996. Cost to be determined.

INCLUDES: Transportation, accommodations, breakfast and dinner, oceanographic research diver certification, tanks and weights, scientific gear, membership in the Reef Environmental Education Foundation.

PREREQUISITES: 25 logged dives (including at least three night dives); underwater photography/video skills helpful.

WHY DO IT: You get to stay up past your bedtime—on past expeditions, divers have been in the

> water until 3:30 a.m. Spawning sam-



used in reef restoration projects; collected data, video and still photography will be used to develop educational tools; and data will be used by scientists and institutions.

ISLAMORADA FIELD SURVEY

R.E.E.F.

Aug. 3-10, 1996.*

MARATHON FIELD SURVEY

R.F.F.F.

Aug. 17-24, 1996.*

BELIZE FIELD SURVEY

R.F.F.F.

Aug. 31-Sept. 7, 1996.*

MAUI'S THREATENED REEFS

Farthwatch

August 1996 (from 10 days to two weeks).*

SAVING CHINA'S REEFS

Farthwatch

August 1996 (from 10 days to two weeks).*

MONITORING FIJI'S REEFS

Earthwatch

August 1996 (from 10 days to two weeks).*

BELIZE BIODIVERSITY RESEARCH PROGRAM

Oceanic Society Expeditions Aug. 4-10 and Aug. 25-31, 1996.*

MONTEREY BAY BIODIVERSITY AND MONITORING PROJECT

Oceanic Society Expeditions Aug. 15-18 and Aug. 29-Sept. 1, 1996.*

SEPTEMBER

Maui's THREATENED REEFS

Earthwatch

September 1996 (from 10 days to two weeks).*

KEY LARGO FIELD SURVEY

R.E.E.F.

Sept. 14-21, 1996. This expedition requires prior field survey participation or extensive survey experience.*

BELIZE BIODIVERSITY RESEARCH PROGRAM

Oceanic Society Expeditions Sept. 1-7 and Sept. 8-14, 1996.*

MONTEREY BAY BIODIVERSITY AND MONITORING PROJECT

Oceanic Society Expeditions

Sept. 26-29, 1996.*

HONDURAS CORAL REEF SURVEY PROJECT

Oceanic Society Expeditions Sept. 21-28, 1996.*

OCTOBER

AUSTRALIAN REEF CULTURE

Earthwatch

MISSION: To create a management plan to restore healthy coral reefs and rehabilitate damaged ones.

WHAT YOU'LL DO: Volunteers collect eggs and sperm of six species of hard corals during the mass spawning-likened to an underwater snowstorm—at Nelly Bay off Magnetic Island's southeastern side. Deploy plankton nets. Measure water quality. Return coral colonies to collection sites. You'll put in long hours of sustained, high-quality observations for up to four consecutive nights. You'll also have land-based tasks: preparing lab and sampling equipment, preparing data sheets and assembling data.

DATE AND COST: October 1996 (from 10 days to two weeks). \$1,695.

INCLUDES: Food and lodging in cabins, and two days of orientation. PREREOUISITES: Half the team are divers, the other half are snorkelers. WHY DO IT: Scientists take the eggs and sperm you've collected and incubate them at the Great Barrier Reef Aquarium. By studying larval development, scientists hope to take coral recruits and resettle them successfully on damaged reefs.

MONTEREY BAY BIODIVERSITY AND MONITORING PROJECT

Oceanic Society Expeditions Oct. 3-6, 1996.*

BIMINI FIELD SURVEY

REEF

Oct. 12-19, 1996.*

NOVEMBER

BELIZE BIODIVERSITY

RESEARCH PROGRAM

Oceanic Society Expeditions Nov. 17-23, 1996.*

DECEMBER

BELIZE BIODIVERSITY

RESEARCH PROGRAM

Oceanic Society Expeditions Dec. 15-21, 1996.*

America's most

controversial environmental

writer has a message

for politicians,

conservationists and divers:

An Essay GREGG EASTERBROOK





istening to this year's environmental debate in Washington, you may wonder if we're all living on the same planet. The political right claims ecological regulations have gone haywire. The political left declares that total environmental destruction is just around the corner.

Neither the right nor the left shows much interest in the most important environmental news of our generation—

that in Western nations, pollution has begun to decline. The political right doesn't want to hear this good news, because it shows that federal environmental regulations can do good things. The political left doesn't want to hear this good news, because it suggests that people and nature can coexist in a constructive way.

Is there no political middle ground on the environment? So far there isn't—and the lack of a reasonable middle-ground approach ought to be a major concern for those who care about resources such as the world's oceans. A central objective of 21st century ecological thought must be to find policies that allow environmental resources, such as the oceans, to be used and protected simultaneously. That requires centrist thinking—exactly what is missing from most current debates about the environment.

A New Approach

I long for a view of environmentalism based on the premise that nature is not fragile but extremely robust, and yet one that acknowledges that an industrial economy must enforce strict rules to protect water and air. I long for a view of environmentalism that allows men and women to interact freely with the ecology and feel no guilt as they do and yet at the same time curbs pollution to negligible levels and enacts broad policies to conserve species and habitats. These views represent a new approach to the environmental debate: one I call "ecorealism."

ENVIRONMENTAL PROTECTION IS THE LEADING SOCIAL ACHIEVEMENT OF

Ecorealism ought to be an attractive notion to divers and anyone else who regularly uses the world's water environments. Divers must believe that it is acceptable for human beings to employ ocean habitats for recreation and research. And indeed it should be. The orthodox environmental view that nature is only safe when kept rigidly separate from human beings is disjunct from the realities of nature itself. People arise from the natural scheme in the same way as other living things; people make the same claim on nature as other living things do.

People in significant numbers are here and—we hope—here to stay. Environmental thought must learn to incorporate the notion that ongoing human intervide regular evidence of the danger of stepping across the line between use and misuse. Even relatively small amounts of petroleum, toxins, municipal sewage and other pollutants can do great damage to water ecosystems. And as the world is now beginning to learn, modern fishing fleet practices demonstrate that the resources of the ocean are hardly inexhaustible. Water resources must be carefully stewarded if the oceans are to continue to both sustain themselves and offer huge amounts of food.

Real Regulations, Real Results

Ecorealism presumes that strict regulation of environmental behavior is not only necessary, but will benefit human beings as

much as it does nature. Consider that in the United States in 1970, the year of the first Earth Day and the founding of the Environmental Protection Agency, only onethird of lakes and rivers were safe for fishing and swimming. Today twothirds are, and the proportion continues to rise. In this case, environmental controls have increased the value of water resources to people-Americans can today fish and swim in thousands of miles of waterways where they

could not less than a gen-

eration ago.

Environmental protection is the leading social achievement of my generation-the best good news in America today. Sensible antipollution rules represent America at its very best: engineers, scientists, market economists and citizen activists getting together, rolling up their sleeves and getting a job done.

A prime example is Boston Harbor, described by George Bush during the 1988 presidential campaign as the dirtiest in the United States. Today the harbor has begun to recover so thoroughly—thanks to a wastewater treatment plant that began operations in 1990—that most of the harbor is once again safe for swimming. At its present rate of improvement, Boston Harbor water is on the way back to its preindustrial quality level. Yet Boston's economy still booms, Bostonians still have plenty of water for showers and their lawns, industries around Boston can once again obtain new sewer-connection permits, boats still ply the harbor for recreation and commerce. The people of Boston and the aquatic systems of Boston Harbor have arrived at a sensible, affordable truce. This sort of ecorealistic outcome can be achieved anywhere men and women take reasonable steps to protect nature.

In fact, since 1970, the United States has undergone a vital "proof of concept" experiment in the ability of nature and an industrial society to coexist. In 1970, most intellectuals writing on ecological affairs believed that trends were irreversibly negative: that smog, water pollution and species loss would worsen unstoppably unless the materialist economy were largely shut down.

Instead, smog and water pollution have declined since 1970, even as industrial output has expanded. A positive swing in environmental statistics seemingly began the day antipollution regulations were imposed.

And in 1970, most commentators expected that hundreds, if not thousands of species in the United States would be driven to extinction in coming decades. Instead, since the Endangered Species Act was passed in 1973, only seven of listed creatures have vanished, while the bald eagle and gray whale have recovered in spectacular fashion, and other creatures such as the peregrine falcon and the sea lion have shown population surges.

Such progress—much of it achieved despite industry dragging its feet and excessively cumbersome regulationsindicates that nature and an advanced economy are not incompatible. Far from it. As new environmental regulations increasingly center on market forces and voluntary choice, the pace of environmental progress should accelerate anew.

Pollution: No Turning Back

Such thinking is especially important in 1995, as some lawmakers propose rolling back many of the very protections that are creating positive environmental trends. Last spring, the House of Representatives passed a new version of the Clean Water Act that, rather than streamlining water programs and cutting paperwork, would turn back the clock to allow some forms of river and offshore pollution to resume. Even an ecorealist who thinks that reports of a natural doomsday



■ In the United States in 1970, only one-third of lakes and rivers

were safe for fishing and swimming. Today two-thirds are, and the proportion continues to rise.

actions with nature are both inevitable and not necessarily bad, considering that nature existed in a state of flux before human beings came along, and would surely continue in flux if people somehow magically disappeared. It's a fallacy to think that the "correct" state for the environment excludes humankind, since humankind itself evolved from the natural scheme. By positing that people and nature belong together, ecorealism offers an alternative to the idea that people should be prohibited from bringing themselves, and the products of their technology, into natural habitats.

And yet anyone who dives must also believe that human activity should be regulated to prevent pollution and other damage to species and habitats. Use of the environment is fine; misuse is not. Vast and rich as they are, the oceans pro-

· RODALE'S SCUBA DIVING

MY GENERATION—THE BEST good news in American Society today.

are exaggerated ought to be shocked by Congress allowing any form of pollution to resume.

In 1992, the United States ended the practice of ocean disposal of sewage sludge by major cities, when the last load of New York City sewage sludge slithered off the barge Spring Book at an Atlantic Ocean disposal point off Cape May, N.J. No other nation in the world treats all its wastewater before discharge. Even the affluent countries of the European Union continue to dump raw sewage sludge directly into the ocean. Ending this practice is both a necessity for ocean protection, and the sort of achievement in which Americans ought to take pride. Finding technical alternatives to dumping sludge into the ocean (such as converting sludge to fertilizer) represents the American cando spirit at its best. The ocean-dumping ban and other forms of point-source controls on industry have reduced pollution of both the East and West Coasts steadily in the past decade, National Oceanographic and Atmospheric Administration statistics show. Yet under the roll-back version of the Clean Water Act passed in the House, some types of ocean dumping would resume. What sense does it make to allow the resumption of any form of pollution that has been stopped?

Though some progress such as the U.S. ocean sludge dumping cessation has been achieved, there are still many unknowns about ocean environmental trends. As former NOAA chief scientist Sylvia Earle points out in her excellent new book, *Sea Change*, nearly all environmental protection initiatives thus far have been focused on the land, where people live. Little is known about many basic ocean environmental questions, such as why many marine creatures seem to undergo cycles of population boom and bust.

"Bust" is the right word for a large number of ocean fish species now being commercially hunted. Due to drift-net and fish-factory approaches to harvesting, many commercial fish species are now classified as "severely depleted" by the United Nations Food and Agriculture Organization. Global rates of commercial ocean fishing have more than quadrupled, from an estimated 20 million tons of catch in the late 1940s to an estimated 90 million tons today. Today's catch level is almost certainly not sustainable. Already there are signs of impending fish population crashes in Atlantic cod and

Pacific salmon.

Overfishing is a classic "tragedy of the commons." Since no one owns the oceans or takes responsibility for them, individual parties may benefit from grabbing every last fish until the entire system collapses. Because the oceans are a commons, protection of fish stocks and other important ocean resources can come in one of only two ways.

Either property rights must be carved out of the oceans, giving owners a self-interest in conservation; or strict international regulations must be proposed. Private ocean ownership, though attractive to some market economists in theory, seems unlikely to work except in coastal areas. That leaves effective international regulation of the ocean environment as the most attractive course. The first glimmer of hope came this summer. when most major fishing nations agreed to a United Nations treaty restricting fishcatch levels. Though the treaty, if ratified, would control only a fifth of the world's fish species, it represents a model on which a range of ocean-resource agreements may someday be based.

The Oceans Tomorrow

What is required for protection of the oceans in the coming century? One priority is to end the ocean dumping of nuclear wastes and hardware, a common practice during the height of the Cold War. The United States sank an estimated 107,000 tons of low-level nuclear wastes at sea before Congress banned the practice in 1970. Other Western nations suspended ocean dumping of nuclear wastes in the early 1980s under the London Convention. Though the former Soviet Union signed the agreement, it kept dumping wastes until late 1993, when a Russian naval vessel released some 900 tons of low-level nuclear waste into the Sea of Japan. Since then Russia says it has abided by an anti-dumping moratorium.

In a sad twist, the U.S. Department of Defense declared in 1993 that it wished to resume sea dumping of nuclear wastes, giving as its reason the continued environmental opposition that has blocked the opening of a planned nuclear disposal facility in New Mexico. Most diplomatic observers now expect, however, that an international treaty upholding the ban on the ocean disposal of nuclear wastes will be finalized in the 1990s.

For divers and other recreational

users of the oceans, continued progress against pollution will be another priority in coming decades. When it comes to limiting coastal pollution, divers should let their representatives and senators know they oppose the revision of the Clean Water Act that passed in the House last winter, and is now being considered in the Senate. This "revision"—really a rollback—would allow some ocean dumping of sludge to resume. It would also lessen pressure against farmers to reduce pesticide runoff to waterways and would grant cities more leniency in discharging the pollution that washes off streets during rainstorms into waterways.

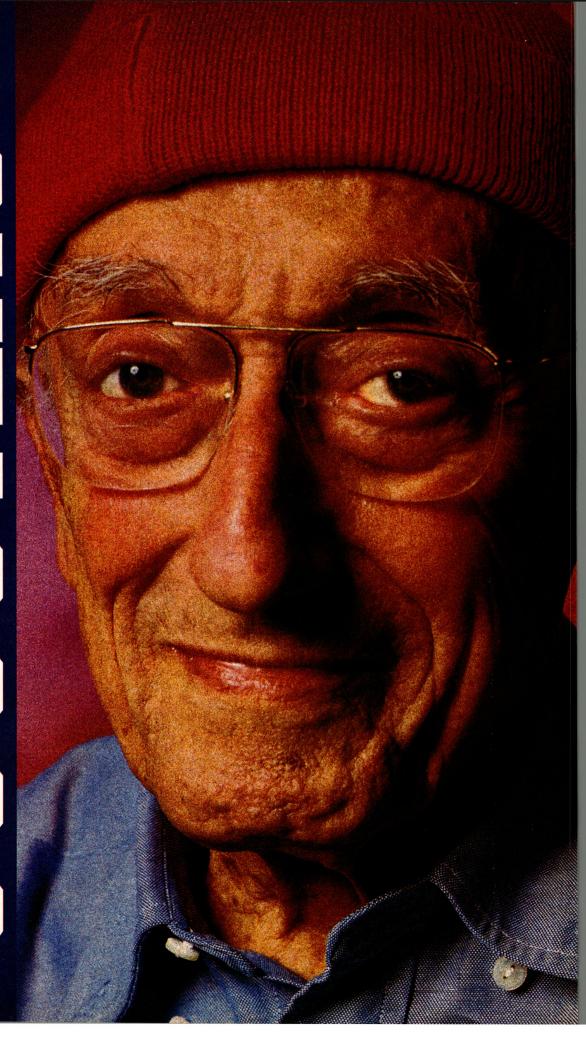
Because the current state of ocean protection is poor, and because many impoverished nations that pollute the oceans will continue to do so in the immediate future, it may seem as though the world's seas, unlike the air and water of the United States, are consigned to a spiral of decline. This would certainly be depressing news to divers.

But consider that 25 years ago it was widely assumed that the water and air of the United States were locked into decline. Then rigorous environmental controls were attempted and, despite many flaws and foibles, these programs began to show results almost immediately. By the way nature measures time, the reversal of U.S. pollution trends occurred overnight.

The message: nature is set up to recover rapidly from ecological abuse and will do so before our eyes if we have the sense to stop the pollution that we make today and clean up the pollution we made in the past. In turn, if developing world nations acquire the means to begin rigorous environmental protection programs in the next century, those nations may achieve the same level of success now seen here. A positive global environmental trend does not exist today, but now can be imagined based on the results of the first 25 years of environmental protection in the West. People, machines and nature can learn to work together for their mutual benefit. That notion may not appeal to either the political right or left in Washington. But it should be very appealing to all the rest of us.

Gregg Easterbrook is a contributing editor of The Atlantic Monthly. His current book, A Moment on the Earth: The Coming Age of Environmental Optimism, is published by Viking.

JACQUES



THENTERVIEW

acques-Yves Cousteau is to the oceans what the Wright Brothers are to the sky: he put us there. His name accompanies most firsts in diving: the first scuba dive (1943), the first cave dive on scuba (1943), the first underwater camera for television (1952). Indeed, "The Undersea

World of Jacques Cousteau" remains one of the most popular series in the history of television—and an inspiration to generations of divers.

Today, at age 85 he's still an unstoppable force of nature. The night before this interview he had arrived from Madagascar and the next day he was on his way to China to launch a new Cousteau Society expedition. In between he was finishing work on the petition for the Bill of Rights for Future Generations, which is to be presented along with nine million signatures to the United Nations in November.

These days, Cousteau's distinguished scientific career has an increasingly urgent and activist agenda. The alarming deterioration in this planet's water system—our amniotic fluid—has made, he believes, the human race an endangered species.

Rail-thin as always, in his ice-blue eyes there still burns the fierce determination and unquenchable curiosity that have made him one of this century's great explorers and godfather to everyone who's ever donned a tank and tasted the sweet breath of a regulator. As I sat next to him on the couch in the photographer's New York City studio, taxis blaring as they plied the concrete rivers below, I couldn't help it: That taunting phrase we've all heard from nondiving friends suddenly played in my head, "Who do you think you are? Jacques Cousteau?"

Rodale's Scuba Diving: Last January I was diving with a videographer you've worked with several times, Ramon Bravo, in Isla Mujeres, the Yucatan. He said he believed the world's best coral reef diving right now was in the Red Sea, off the Sudan, because it has seen so little activity in the last 20 years.

Cousteau: I never try to know what is the best. I enjoy everything. There is some good diving in Sudan, yes. The biodiversity of coral in the Red Sea is far less than in the Indian Ocean, where I just was on my recent trip to Madagascar.

RSD: What dives stood out as most memorable for you there?

Cousteau: I enjoy everything. Even dull dives teach me a lot of things. In places where there is no coral or no fish, there is always something else. There is life within the sediment. I am fascinated by everything on each dive, the same as I am fascinated by walks in the country. Each is special.

RSD: You had a memorable free dive in 1936, at the age of 26, when you wore a pair of Fernez goggles for the first time and peered below the surface. You wrote: "Sometimes we are lucky enough to know that our lives have been changed, to discard the old, embrace the new and run headlong down an immutable course. It happened to me on that summer's day, when

my eyes were opened by the sea."

Cousteau: It was an important moment. The contrast between the streetcars above and the fish below I had never seen, as I changed my angle of view—that was important to me. But I was happy in exploring diving since the age of 13.

RSD: Even at the lake in Vermont?

Cousteau: That was at the age of 10. But not only there. Also in Cannes. I had many experiments. At that time fins did not exist and the goggles were crude—they were like the ones worn by Asian pearl divers. That's all that was available, and even so they were rare. No fins, no mask, nothing.

RSD: That moment led to a lifetime of exploration, a lifetime of being "amazed by nature and dazzled by life," as you've written. At what point did your desire to explore the underwater world become a desire to protect it?

Cousteau: Not one experience. We were diving, the three of us—[Philippe] Tailliez, [Frédéric] Dumas, myself. We were

TO EARTHBOUND
MAN HE GAVE
THE KEY TO THE
SILENT WORLD.
NOW COUSTEAU
ASKS: WHAT
HAVE WE DONE
WITH IT?

BY DAVID TAYLOR

IONATHAN LEVINE

interested in exploring, discovering what scuba diving was, this new "aqualung" diving. It was over three or four years that we saw every time we were going somewhere it was a little less rich in life. So we tried to investigate why and we discovered that it was because of those fishing along the coast against regulations. Some were using dynamite from World War II, et cetera, et cetera. But the realization came progressively.

RSD: Does the Bill of Rights for Future Generations address some of these problems? Could you tell our readers about your work on this initiative?

Cousteau: With pleasure. We created The Cousteau Society in America on the first of January, 1974. Soon after that we created an advisory council of top-notch scientists from various disciplines, and we met with these people over several years. For 15 years we tried to analyze why the waters were getting more polluted, why the environment was being constantly damaged. We came to the conclusion that it was because the decision makers were only making their decisions considering

the near future. They had never balanced seriously the consequences of their decisions with what could happen over the medium range, long range and very long range. We came to the conclusion that those who were going to suffer the most were the future generations.

RSD: Unless we do something.

Cousteau: Yes. They have to be protected by some kind of declaration, the same as the values of humankind-fraternity, equality, et cetera—are protected by the three declarations of human rights—one is French, from the French Revolution, one is the foundation of America, and the third one is the foundation of the United Nations. Each declaration of human rights does not mention the future generations. It only defends the rights of people living today. It also does not mention the duties that rights automatically imply. I think if you have the right to do something, you automatically have the duty to preserve it for others.

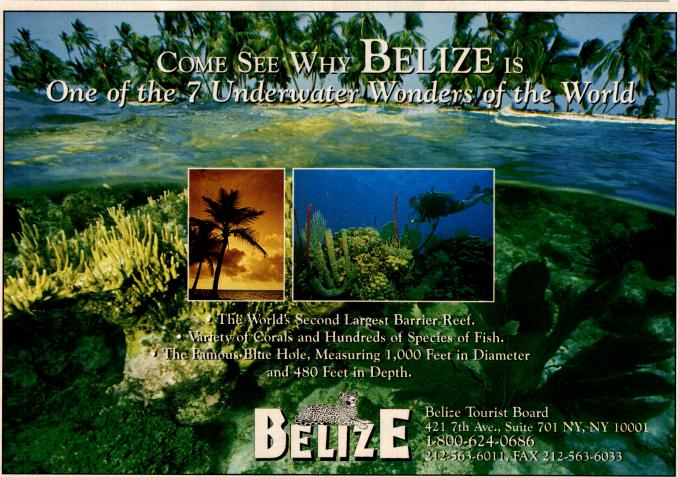
RSD: What was your first step in get-

ting the Bill of Rights initiative up and running?

Cousteau: The advisory council named a committee of five, including me, to write the draft of the Declaration for Future Generations in order to ensure that we would think about the consequences, the long-range consequences. I took this document and went to see the Secretary General of the United Nations. At the time he received me courteously and said to forget about this declaration. He told me, "You have to have several heads of state to stand for your declaration and present it to a number of organizations." So I said thank you and went to my own French leaders at the time, who said, "Oh, that's fine," but they did nothing.

RSD: What then?

Cousteau: Well I said, dammit, we are suffering more and more from these things. The governments are building up debts that will have to be paid by the coming generations. We are destroying the environment, but who suffers? Future generations will pay the price. So



I took the text and turned it into a petition. It was very successful when it started three years ago. We got over three million signatures in France alone. Since then we've gotten signatures from most parts of the world, some of them very successful, like Brazil. And we are now at more than nine million signatures. UNESCO is taking this into consideration and is preparing to submit this text to the United Nations this year in November. So that's where we stand and we hope it will be working.

RSD: Many readers also wonder at times if their activities as divers—since they're the ones who stay in dive resorts that crowd shores and use the diesel-powered dive boats—hurt or help the kinds of efforts you're making.

Cousteau: It can hurt or be a blessing. Careful divers help, careless divers harm. We have tried, my company U.S. Divers has tried hard to persuade our customers to be careful. Also, I forbid the company to sell guns. So we have abandoned that field which was profitable just to make sure that we would not collaborate with

the destruction of the environment.

RSD: You're referring to underwater spearguns or are you referring to all guns?

Cousteau: Well, that's something else. Our only action was against spearguns. But I am against all guns in general, yes.

RSD: Many of our readers are active in environmental protection issues. How can these groups work more effectively with traditional antagonists, like the fishing industry, for example?

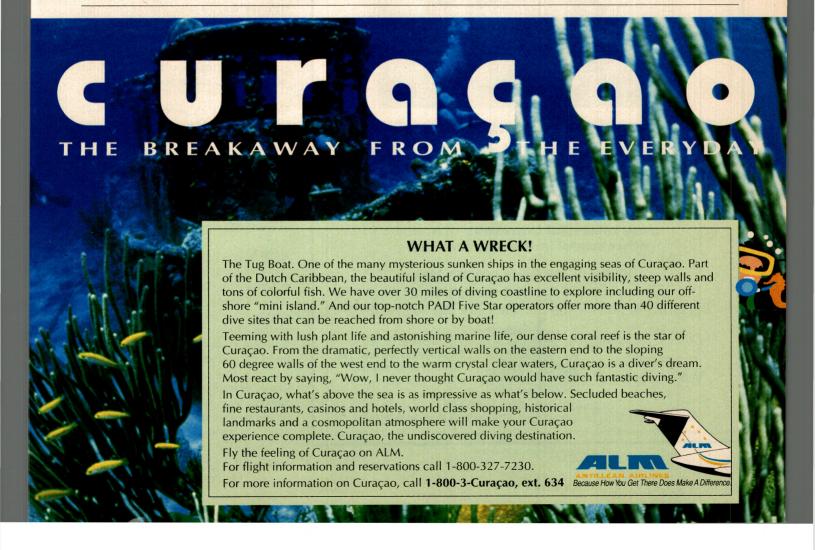
Cousteau: Public opinion can do a lot to influence the representatives in a democracy. But in order to do that they have to act together with a simple, worthy goal and express their opinion by a petition, for example, with hundreds and thousands of signatures.

But first they need to learn what the problem really is, not listen to rumors. Often rumors based on hypersensitivity have very little to do with reality. In short, people have to screen and think about their opinions, then stick to what they feel is the truth. Once they have something that they are sure of, they have to group with people who share the same concerns and push this petition and present it to their representative, or, if possible, a head of government. If there is no follow-up, then they have to push more. Above all, people must remember that individuals, if they know how to work together, can do almost anything.

RSD: You wrote in *The Ocean Planet*, "The miracle of life defies the natural law of degradation." Yet aren't we in danger of having altered the balance of nature in favor of degradation?

Cousteau: It's irreversible. The environment is no longer what is was. We have destroyed a little more than one million species. Eradicated forever. Plants, insects, animals and birds. One million species are gone forever already. That includes 8 percent of the total number of fishes there are in nature. So it is enormous destruction that is already done.

RSD: A lot of your work is aimed toward



telling children, our future leaders, about that.

Cousteau: Telling children. You will be interested to know that we are launching a magazine for children at the end of this year. We are launching this magazine in France and then in all Spanish-speaking countries, and in the two Portuguese-speaking countries, Portugal and Brazil. We also hope to launch this

magazine in America but at a later date. The magazine will be called *Cousteau Junior* and it is also going to be launched in Japan and China eventually. This is for children from 10 to 12 years old, and I saw yesterday the layout of the first test issue.

RSD: Were you pleased with it?

Cousteau: It looks like no other maga-

zine, it's interesting.

RSD: How is it different?

Cousteau: You will see. It's the way we talk to children. We don't talk to them like we talk to a cat, like in other magazines.

RSD: The *Dolphin Log* does a good job of communicating.

Cousteau: But the *Dolphin Log* is once every two months, it is only 20 pages. This one is four times as many—a serious magazine. Also, this one is published every month and it is aimed not to our Cousteau Society members, but to everybody else, the general public. It will be sold on the newsstands.

RSD: One of the things that fascinates me about your work is how it attempts to bring together two very different emotions. You wrote about your first successful scuba dive with Dumas in the French Riviera, "I looked into the sea with the same sense of trespass that I have felt on every dive." Yet one of the primary themes in your work is our need for unity with the sea. To what extent does this attempt to help all human beings overcome their sense of trespass and reunite with the sea underlie your exploration, your filmmaking, your books and your work in The Cousteau Society?

Cousteau: Well, it's more than that. There are two drives. My instinctive curiosity: I'm a committed curious person. And the second drive is my immense love of people. And by putting these two things together, curiosity of nature and love for people, it adds up automatically to ecosociology, or how a society affects the environment.

RSD: You wrote that you've had this curiosity for as long as you can remember, that you remember standing on a dock in France watching ships go by wondering what is holding up that ship, saying, "I wish I could see beneath it." You had such curiosity about what's under the sea even at that age.

Cousteau: It's *in* you. Some people are hard workers, some people are lousy, some people are curious, some people don't care. I happen to be curious by birth.

David Taylor is RSD's executive editor.

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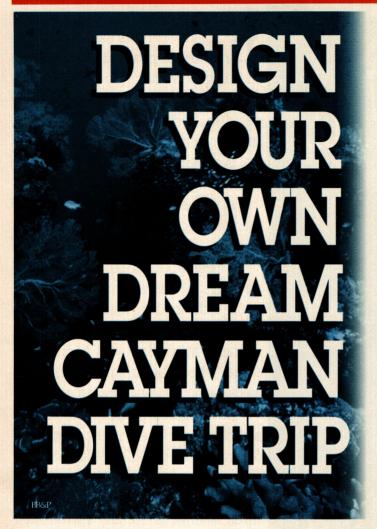
egend has it that the Cayman Islands were once the playground of notorious pirates like Blackbeard and Long John Silver who hid their priceless treasures on the shores of this tropical paradise. Today, you need only don a snorkel or scuba tank to discover Cayman's real treasures: the equally legendary walls, lush coral gardens and fish-filled wrecks that make her marine environment one of the most exciting and impressive in the world.

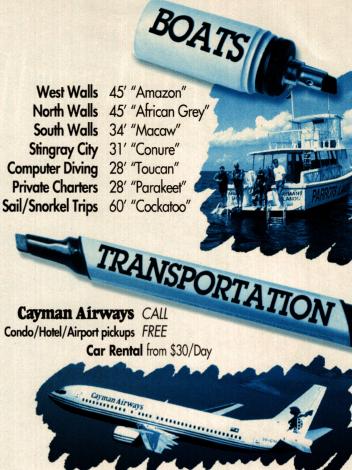
A mere 475 miles south of Miami, the Cayman Ridge descends more than a mile to the seafloor. Along this ridge, the Cayman Islands—Grand Cayman, Little Cayman and Cayman Brac—are the only three points where the summits of this submerged mountain range break the surface.

Unsurpassed in steepness, depth and coral coverage, the sheer walls off of Grand Cayman, Little Cayman and Cayman Brac are spectacular. Grand Cayman, the most developed of the three islands, is literally surrounded by drop-offs. The deep coral canyons and pinnacles at East End, the 10-mile stretch of precipice along the west side of the islands, and the southern reefs and northern walls punctuated by chutes and carpeted with gorgonians, seafans and sponges each offer their own unique form of entertainment for divers.

Little Cayman is synonymous with Bloody Bay Wall, a legendary place in its own right. Along with Jackson Bay, there are few wall diving areas that are more spectacular. An impressive diversity and abundance of fish and coral life thrive in this sun-drenched playground with no boundaries. Even more stunning is the vertical precipice that plunges 1,000 feet to the ocean floor.

(Continued on page 73)





PARROTS LANDING 800-448-0428, ext. R.O.D.

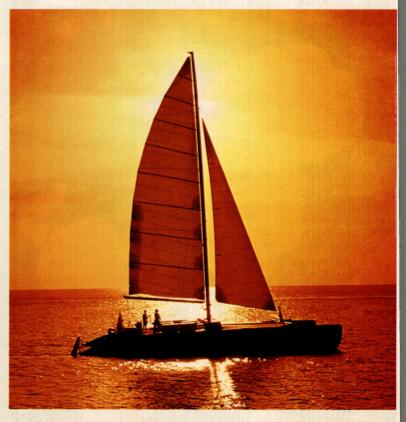
Dive Sites: South Walls and Shallows - Palace Pinnacle, Kent's Caves, Oriental Gardens; North Wall - Ghost Mountain, Tarpoon Alley, Eagle Ray Pass, Babylon; West Wall - Hepps, NW Point, Big & Little Tunnels, Trinity Caves

Boats: Fleet of nine custom boats from 25' to 60' long including two 45-foot custom Garcias, a 42-foot jet drive and a 60-foot sailing catamaran.

Diving Services: 2-tank morning and afternoon dive \$60 each, snorkeling \$30, shore diving unlimited and free, night diving on Tuesdays and Fridays \$50, computer diving allowed, non-guided buddy diving, handicapped diver access.

Certification Services: Full open-water courses through PADI or NAUI. Referrals from PADI, NAUI, SSI and NASDS. Advanced open water through PADI or NAUI, plus Rescue, Medic First Aid, Specialty Courses and Photo.

Hotel/Diving Packages: Packages with Coconut Harbour, Sleep Inn or Seaview. Coconut Harbour - great shore diving, gear lockers, kitchenettes, pool, Blue Parrot Restaurant, on-site dive shop. Sleep Inn - modern rooms, pool, bar and grill, on-site dive shop. Seaview Hotel - shore diving, restaurant, 15







\$368

	3NTS	5NTS	7NTS
Christopher Columbus	\$331	\$541	\$696
Grapetree/Cocoplum	\$312	\$510	\$708
London House	\$377	\$618	\$788
Tarquynn Manor	\$319	\$521	\$723
Victoria House	\$335	\$548	\$761
Villas of the Galleon	\$390	\$639	\$889

Prices are per person based on quad occupancy and include UNLIMITED DIVING, condo gratuities and taxes. Prices are per person based on double occupancy and include UNLIMITED DIVING, notel gratuities and taxes.

Dive with Parrots Landing, Grand Cayman's most elite dive facility, and you can select between 25 Hotels and Condos all along the 7-Mile Beach area.

Choose from 6 boats to take you to Cayman's amazing dive sites including the North, South & West Walls and Stingray City.

Parrots Landing even offers all-day '3 Tank' boat trips to the remote and virgin stretches off East End. Plus there are caves, grottos and a 6000' wall just a snorkel from our dive shop.

All packages include free tanks, weights & weight belts, so call us now and design your own dream dive vacation!

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CIRCLE NO. 103 ON READER SERVICE CARD

\$838

rooms, bed 'n' breakfast atmosphere, tiki bar. 8 days/7 nights, unlimited boat dives, includes taxes, gratuities, airport transfers and midweek airfare from Miami - \$899.00. At Seaview and Sleep Inn only - 6-night package \$827, 5-night package \$718, 4-night package \$609 and 3-night package \$495. Also offer condominium packages.

Special Services: Advanced multilevel computer dives, Stingray City photo/video adventures.





"Parrots Landing has earned its elite reputation by utilizing the finest boats, the most qualified staff and by having four reefs accessible from our dock. We have maintained this reputation simply by giving divers a variety of sites, a little extra freedom and a good price."

SUNSET HOUSE/SUNSET DIVERS

Grand Cayman

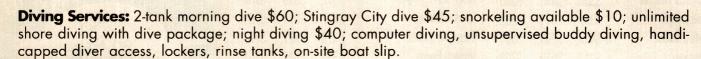
800-854-4767 or 809-949-7111, ext. R.O.D.

Accommodations: 59 rooms, standard, deluxe ocean view, plus 1-bedroom apartments, air-conditioning, private bath, telephone, TV.

Hotel Amenities: Seaharvest Restaurant serving seafood and continental cuisine, gift shop, Cathy Church Underwater Photo Gallery, freshwater pool and jacuzzi. Thatched-roof Seaside Bar.

Dive Sites: West and South walls, North Wall and East End, Stingray City.

Boats: Six boats - two 48', 20 diver capacity; two 36', 20 diver capacity; one 34', 12 diver capacity; one 31', 15 diver capacity.



Certification Services: PADI, NAUI, NASDS full certifications, referrals, advanced and specialty courses; SSI referrals.

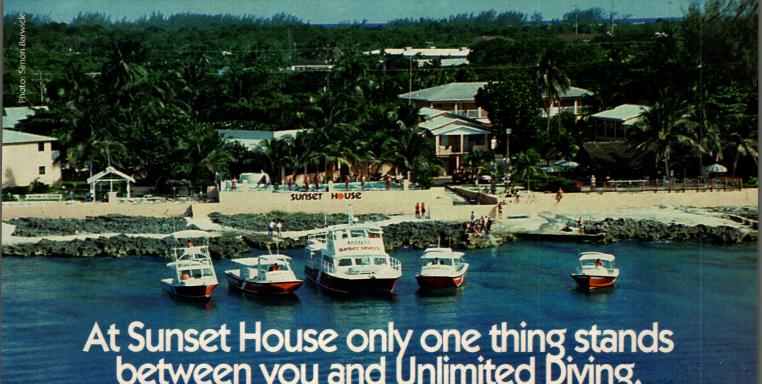
Diving Equipment: Sherwood BCD's (Silhouette) \$10 per day, Sherwood Magnum regulators/gauges \$10 per day, 72 cu.ft. tanks \$6.25, refills \$3.75, Mako 5415 and RIX compressors, full line of video and Nikonos cameras through Cathy Church Photo Centre.

Special Services: 3-tank all day trip to North Wall and East End dive sites \$125, photo processing at Photo Centre, daycare/babysitting services available.

Hotel/Diving Packages: From Apr 16 - Dec 15, 1996 — 8 days/7nights (pp/do) standard \$872.50, deluxe \$942.50, deluxe oceanview \$1030.00,

apartment \$1100.00; 6 days/5 nights (pp/do) standard \$617.50, deluxe \$667.50, deluxe oceanview \$730.00, apartment \$780.00; 4 days/3 nights (pp/do) standard \$362.50, deluxe \$392.50, deluxe oceanview \$430.00, apartment \$460.00. Package rates include air-conditioned accommodations, full breakfast, daily 2-tank boat trips every day except day of arrival and departure, complimentary unlimited offshore diving every day except day of departure, tanks/weights/belt, complimentary dive gear lockers, Welcome Island Rum Punch, Surprise package, taxi transfers to and from airport. Summer '96 rates per room (pp/do) — standard \$100, deluxe \$120, deluxe oceanview \$145, apartment \$165. Non-dive packages also available.

"Since 1959, Sunset House, owned and operated by divers, has dedicated itself to catering to the needs of its diving guests. Sunset Divers' on-site facilities offer guests the ultimate in convenience and service for a hassle-free dive vacation."



At Sunset House only one thing stands between you and Unlimited Diving. DIVE TABLES

You can dive right off our foreshore or from one of our 7 first-class dive boats.

The only thing to hold you back are dive tables.

Diving back home will never be quite the same after you've become a Sunset Diver.



Or, if you prefer, your computer.

And if you're not already a qualified diver, our experienced Scuba School instructors will arrange courses to suit your schedule to get you started right.

Sunset House is also home to the famous Cathy Church Photo Centre.



For more details call 809-949 7111 or toll-free from the US on 1-800 854 4767.

Or write PO Box 479, Grand Cayman, BWI and discover how you can dive to your heart's content. CIWAY

Grand Cayman's Hotel For Divers By Divers

J/W & Diveboat photos: Cathy Church



"RED" DISCOVERS A CARIBBEAN TREASURE

EXCLUSIVE OFFER IN GRAND CAYMAN!

A steal for vacation pirates . . . Red Sail Sports and the newly remodeled Clarion Grand Pavilion Hotel teamed up to offer you incredible dive package savings. Inclusive of accommodations and daily two tank dives, 4 day/3 night dive packages start at only \$279.

Call today! Remember to mention this ad when booking to receive this special rate.

NEW PRICING IN ARUBA!

Explore some of the best wreck diving in the world with Red Sail Sports Aruba. Choose from an assortment of packages including accommodations, daily diving and more. Diving only packages are also available at unbelievable prices . . . 5 tanks beginning at \$125.

Packages with other select resorts in Aruba and Grand Cayman are also available.

Call today and discover for yourself the Caribbean's greatest dive treasure.

800-255-6425

Rates quoted for the Clanon package are per person, double occupancy valid 4/17-12/16/95. Aruba pricing is a diving only package and restrictions may apply.

American Airlines



CIRCLE NO. 104 ON READER SERVICE CARD

RED SAIL SPORTS

Grand Cayman

800-255-6425

Dive Areas: West and North sides

Boats: Two 45', 24 diver capacity; 43', 20 diver capacity; 35', 12 diver capacity; all boats have freshwater shower, rinse tanks, marine head, dive platform, camera table, cooler, water and lemonade, fresh fruit, handicapped accessibility.

Diving Services: 2-tank morning dive US\$60 + 10%, 1-tank afternoon dive US\$45 + 10%, snorkeling US\$25 + 10%, shore diving unlimited and free with dive package, night diving Tues. and Fri. US\$45 + 10%, unsupervised buddy diving allowed except for wall dives, handicapped diver access.



Certification Services: Referrals - PADI, NAUI, SSI, NASDS, HSA. PADI certification courses, open water, advanced rescue, divermaster and many specialties, Discover Scuba, four HSA staff for handicapped courses.

Hotel Diving Packages: Through Hyatt Regency, the new Westin Casuarina, Clarion Grand Pavilion, Seaview and Christopher Columbus Condos. Best buy - Seaview Hotel, (Oct. 16-Apr. 30, 1996), daily 2 tanks, night dive, unlimited shore, t-shirt, magazine subscription, 8days/7nights, \$763.

Diving Equipment: 80 cu.ft. tanks, Sherwood Brut regulators with octopus, air & depth gauges, bottom timer, Sherwood BCD's, mask, fins, snorkels.

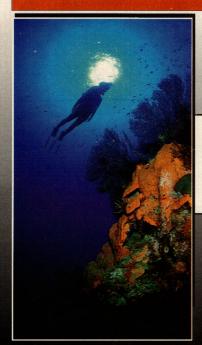
Special Services: Video and photo services available, handicapped accessible facility, disposable cameras, housings for rent.

"Expect quality, pampered diving with Red Sail Sports. First-class, friendly, professional service. You need never lift a tank again."



DON FOSTER'S DIVE CAYMAN

A TRUE DIVING DEAL



There's more to getting a good deal than a low price.

It's getting high quality service at a low price.

And that's what Don Foster's is known for.

Classic Cayman Diving
Spacious, modern comfortable boats
Professional, friendly staff
Established operation
One-call-does-it-all reservations service for diving, air and hotel

Dive Packages Start at \$210.00

Call and book a trip with us and you'll find out why divers keep coming back to Don Foster's.

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CIRCLE NO. 100 ON READER SERVICE CARD

DON FOSTER'S DIVE CAYMAN

Grand Cayman

1-800-83-DIVER, ext. R.O.D.

Dive Sites: Daily - North Wall, West Wall, Stingray City.

Boats: Three 52' boats with 22 diver capacity, 42' with 17 diver capacity, 60' with 25 diver capacity, all boats have fresh water, changing room, camera table, rinse bucket and dry storage.

Diving Services: 2-tank morning dive \$60; 1-tank afternoon dive \$35; snorkeling \$25; shore diving unlimited and free if on package; night diving Tues and Thurs with minimum of 6 divers \$45; unsupervised buddy diving allowed; handicapped diver access.

Certification Services: PADI, NAUI, SSI.

Hotel/Diving Packages: Radisson Resort on Seven Mile Beach - Super Saver Special: 8 days/7 nights/6 days diving, \$650.00 pp/do, good through December 14, 1995. 7 days/6 nights/5 days diving, \$1070.00 pp/do, good through April 14, 1996.

Diving Equipment: 400 80 cu.ft. Sherwood tanks, 80 Sherwood regs with oct. and gauges, 80 Scubapro BC's, 2 Mako compressors 28 cfm, Genesis masks, Dacor fins, Sherwood timers, Nikonos camera and assorted lenses, Ikelite strobes.

Special Services: Photo buddies, "Happy Snaps," instructor buddies, special dive rates for advance purchases, complimentary pick-up for diving (7 Mile Beach).

"Don Foster's takes pride in offering the best dive vacation possible. An experienced, friendly staff and spacious, modern dive boats are just two reasons why divers keep coming back to Don Foster's again and again."



CAYMAN DIVING LODGE

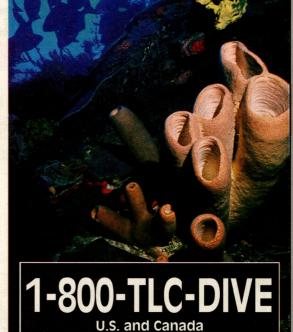
AT GRAND CAYMAN'S EAST END

A Land Based Live-Aboard Dedicated to Diving

- ► ALL-INCLUSIVE BEACHFRONT DIVE HOTEL ON GRAND CAYMAN'S EAST END
- ▶ BEST DIVING IN THE CAYMAN ISLANDS
- OUR LIVE-IN STAFF WILL SHOW YOU THE CAYMAN OF YESTERDAY
- ► EXPLORE 17 MILES OF UNTOUCHED PARADISE
- ► ENJOY SECLUSION AND ISOLATION WITHOUT CROWDS AND CONDOS
- 2-TANK OR 3-TANK PACKAGES, NIGHT DIVES, STINGRAY CITY CRUISES
- PRIVATE CORAL SAND BEACH AND PRIVATE BOAT DOCK
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East End, Grand Cayman, BWI 809-947-7555 • Fax (809) 947-7560



Fax (806) 798-7568

CAYMAN DIVING LODGE

East End, Grand Cayman

1-800-TLC-DIVE ext. R.O.D.

Accommodations: 14 air-conditioned rooms, private bathrooms, sliding glass doors opening onto sun decks, beachfront, ocean-side and ocean-view rooms.

Amenities: All services under one roof. Three meals daily served in beachfront, open-air restaurant/bar, boutique offering pharmacy items, gifts and dive equipment, private beach and dock, protected lagoon for swimming and snorkeling.

Dive Sites: All of the East End sites including Babylon, Snapper Hole, Iron Shore Caves, 3 Sisters, Chimney and Tunnel of Love.

Boats: Two 45', 15-18 diver capacity, large camera tables, central tank racks, separate rinse tanks for cameras and masks, freshwater showers, water coolers, lots of room.

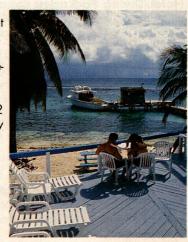
Diving Services: 2-tank morning dive \$60, 2-tank afternoon dive \$40, snorkeling \$15, night diving Monday and Friday \$40, computer diving allowed, unsupervised buddy diving allowed.

Certification Services: PADI certifications - open water, advanced open water, rescue, diversater and all specialty courses.

Hotel Diving Packages: All-inclusive dive vacation packages. Best Buy - 7 nights/6 days, 12 boat dives, meals, unlimited tanks, service charges and tax \$1,105 pp/do. Will customize any combination of dives/meals/lodging into a package designed by the diver.

Special Services: Private charters, personal guides, photo shoots, dive videos.

"We are a small, inclusive diving lodge located beachfront on Grand Cayman's secluded East End. We offer the best diving in the Cayman Islands."





\$646⁵⁰ pp/do lncl

6 days, 5 nights, Includes: 4 days of two-tank div-

ing on the magnificent North Wall, complete 1 bedroom suite with kitchen, continental breakfast, airport transfer.

\$784²⁰ pp/do

Stay 7 nights, pay for 6! Includes: 5 days of two-tank

diving on the magnificent North Wall, complete 1 bedoorm suite with kitchen, continental breakfast, airport transfer.

Exclusively for guests of SunEs





Dive With Friends.



Daily trips to the North Wall and Stingray City
Brand new custom dive boat just yards away
Personalized attention on an uncrowded boat
Deluxe all-suite accommodation with individual dive lockers

Call (800)654-3130 ext. ROI

Fax (809)947-5024, or write: P.O. Box 2070, Grand Cayman, BWI

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INDIES SUITES

Grand Cayman

1-800-654-3130 ext. R.O.D.

Accommodations: 38 1-bedroom suites, two 2-bedroom suites facing jacuzzi/pool. All suites have TV's, phones, full-size refrigerator, dishwasher, microwave, stove, full dining and living room, complimentary daily maid service and continental breakfast.

Rates: High season - Dec 15, 1995 - Apr 15, 1996: \$240/1 bdrm, \$290/2 bedrm; low season - Apr 15, 1996 - Dec 14, 1996: \$160/1 bdrm, \$190/2 bedrm.

Amenities: Flying Bridge pool/cabana bar, scheduled activities and events, beautifully designed freshwater pool, jacuzzi, Wed. night BBQ and Fri. night happy hour both w/ live entertainment, complimentary sunset cruise, lobby shop/convenience store, Indies Divers.

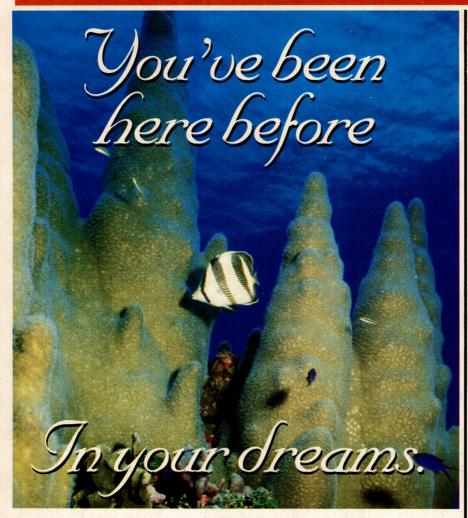
Diving Services Through Indies Divers On Site: 38' and 34' dive boats -12 diver cap., freshwater rinse, large camera table; 2-tank a.m. dive \$65 North or \$60 West; 1-tank afternoon dive \$45; snorkeling \$30; night diving \$55 North or \$50 West; computer diving; unsupervised buddy diving; handicapped diver access.

Dive Sites: Best sites along North Wall and Sound including Stingray City, Tarpon Alley, Hammerhead Hill, Lemon Drop-off. West Wall - Trinity Caves, wreck of Oro Verde, Orange Canyon, Big Tunnels.

Special Services: Guided wall dives, group and private video services on dive and snorkel trips, underwater photo gallery, instructional photo courses available.

"As Cayman's only all-suite dive hotel, we offer all the comforts of home with the quality and service of a major hotel. Our in-house dive operation provides highly personalized service with custom-built dive boats, convenient rinse and lockers and the dock just minutes away."





Gayman Brac-

Come experience the incredible diving you've only dreamed about. On Cayman Brac. Crystal clear waters. Incredible walls. Nearby reefs, teeming with an abundance of exotic marine life. And with two fabulous world-class resorts to choose from like Divi Tiara Beach Resort and Cayman Brac Beach Resort we can make your stay on Cayman Brac truly a dream trip of a lifetime.

And now a stay on Cayman Brac is all at a price you can stop dreaming about.

> Summer Special Airfare, Room & Diving. Nights from \$889



Choose Your Resort



Call for Reservations & Information

Offer spood October 14 · November 25, 1995. Subject to change without notice. Price quoted is per person, based on double occupancy. subject to availability and may change without notice. Hotel taxes and service fees not included.

BRAC REEF BEACH RESORT

Cayman Brac

800-327-3835 ext. R.O.D.

Accommodations/Rates: 40 standard ocean-view rooms. All rooms have ceiling fans, air-conditioning, satellite TV and two double beds or a king-sized bed. Call for special super saver packages for Fall 1995, Winter 1996 and Summer 1996. Ask about our all-inclusive packages offering all meals, unlimited beverages, 3 tanks a day, unlimited shore diving, free custom VHS dive video, free PADI buoyancy control course, taxes, service charges, and airfare, too!



Amenities: Restaurant with both inside and patio dining, meals served buffet style. Gift shop, dive shop and photo shop. Freshwater pool and jacuzzi, lighted tennis court, bicycles.

Diving Services: Reef Divers on-site diving Cayman Brac and Little Cayman sites. Five 42' dive boats. 2-tank morning dive \$50, 1-tank afternoon boat dive \$25, snorkeling \$20, night diving \$40, unlimited and free shore diving if on package, computer diving allowed, handicapped diver access. PADI, NAUI, NASDS and SSI certification services. Reef Photo and Video Center offers daily E-6 processing, custom underwater videos, equipment sales, still and video camera rentals, repairs and a complete instructional program.

"Reef Divers is committed to providing the best and safest dive vacation on Cayman Brac including great diving on Bloody Bay Wall, Little Cayman."



While dive operators on Cayman Brac visit Little Cayman sites on a regular basis, Brac boasts 25 miles of its own spectacular wall. Divers won't want to miss the action at Anchor Wall or any number of sites along the western side of the island. No wonder Cayman is one of the five most-visited diving destinations in the world.

While Cayman's walls attract most of the attention, the Cayman Islands offer underwater amusement for every taste and skill level; whether it be lush coral gardens, overgrown wrecks, shallow snorkels or close encounters of the marine kind. Where else can you kiss a dozen stingrays, rendezvous with a giant manta or set up a photo session with a celebrity grouper?

The official Cayman Islands diving guide lists almost 200 named sites, approximately 30 professional dive operators and more than 70 dive boats and two excellent live-aboards.

And if that isn't enough variety for you, topside, the islands are equally diverse. Little Cayman and Cayman Brac are the ideal secluded getaways where time is measured by your dive computers and dinner bells and nightlife consists of stargazing and listening to a symphony of crickets. In contrast, Grand Cayman offers a plethora of bustling restaurants, ritzy resorts and comfortable condos, designer boutiques and long lazy beaches for sunbathing and watersports.

Something for everyone? Most likely: The Cayman Islands



CAYMAN ISLANDS AFFORDABLE

Bed • Breakfast • Boat • Buggy "Put your \$\$ in the Water"

- Room & Full American Breakfast
- · Personalized 2-tank boat dive
- · Free shore diving
- Rental car each day
- Room only \$55
- Dives only \$55

USA RESERVATIONS

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CAPTAIN MARVIN'S

THE ENTERPRISE BED & BREAKFAST

CIRCLE NO. 101 ON READER SERVICE CARD

ENTERPRISE BED & BREAKFAST

Grand Cayman

818-716-8380 ext. ROD

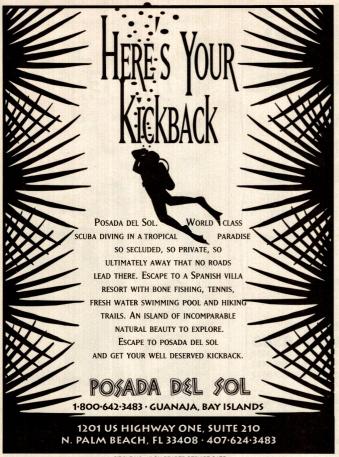
Accommodations/Rates: Six regular rooms and one two-bedroom suite. All rooms with private bath, air-conditioning, microwave, bar, refrigerator, sink, TV, table and chairs, patio or balcony. US\$55 for one or two persons all year long (includes full American breakfast). Room is lower with dive package. Government tax and service is additional.

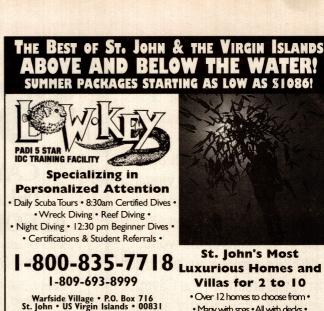


Diving Services: Through Captain Marvin's Aquatics diving all popular dive sites with emphasis on the North Wall. 4 days/3 nights PP/DO \$175 includes 2 days of diving, free shore diving, breakfast.

Our motto is our goal: "Put your \$\$ in the water." We offer good, clean accommodations at a fair price. Make it so!







· Many with spas · All with decks ·

 Lush landscaping
 Spectacular views • Fully Equipped •

· All near the best beaches ·

· Experienced on-island management · On call 24 hours, dockside greeting and escort to villas.

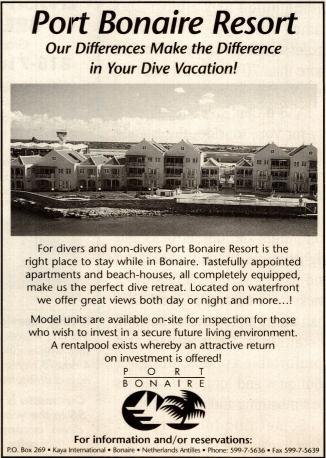
A bit of paradise for every taste and budget.

I-800-424-6641 I-809-776-6641



CIRCLE NO. 71 ON READER SERVICE CARD







aying you've dived Micronesia is like saying you've sampled the local pastries in every bakery in Europe. A huge area that spans several thousand miles in the Western Pacific, Micronesia embraces more than 2,000 islands, each with its own distinct geography, culture and underwater environment. A perfect example of the diversity are the islands of Palau, Truk, Yap and Pohnpei. Each is unique above and below

the water. And once you've experienced their underwater treasures, the reason for their popularity becomes crystal clear.

POHNPEI A Pohnpei is a dramatic panorama of mountain

peaks, verdant rain forests and cascading waterfalls. Ringed by a barrier reef a mile offshore, Pohnpei offers divers a varied underwater experience—shallow coral reefs inside the lagoon, steep walls that descend to 6,000 feet on the outside of the reef, passages that cut from the lagoon to the ocean, and an impressive concentration of tropical and pelagic fish life. Topside, Pohnpei is historically and culturally rich, demanding serious topside exploration, no matter how insatiable your appetite for diving may be.

PALAU A With 700 species of coral, more than 1,500 species of fish and some of the best virgin diving in Micronesia, it's no surprise that Palau has been named one of the Seven Underwater Wonders of the World. The land of rock islands has it all—crystal-clear water with visibility usually exceeding 100 feet, steep, lush walls that begin as shallow as 10 feet and marine life that runs the gamut from colorful schooling fish and brilliantly hued tropicals to delicate invertebrates. The abundance and diversity is astonishing.

TRUK A Truk Lagoon is another of Micronesia's wonders. Fifty years ago, the U.S. Navy sank the most amazing artificial reef in the world in the 40-mile-wide lagoon of Truk. Today, still remarkably intact, the remains of the Japanese Imperial Navy 4th Fleet now comprise the finest collection of wreck dives anywhere in the world. But even if wreck diving or World War II history isn't your cup of tea, Truk rates a visit because these seem-

IN THE PACIFIC

ingly lifeless hulks form the foundation for one of the most vibrant living reefs in the world.

Huge soft corals shroud every

by Susanne Cummings

vibrant living reefs in the world. Huge soft corals shroud every inch of steel while clownfish, lionfish and a host of tropical species

fish and a host of tropical species and invertebrates have taken up residence on these massive wrecks.

*AP A stronghold of island culture and tradition, Yap is a land of cherished traditions, of dancing and stone money. It is also the land of giant mantas.

Encircled by a reef that creates a 10-square-mile lagoon, several of the natural channels that cut through the reef attract manta rays, which thrive on the rich nutrients carried by the tidal currents that rush through the channels. Watching them somersault one after another through the channel is nothing less than awe-inspiring. Needless to say, this is the kind of photo op that underwater photographers fantasize about.

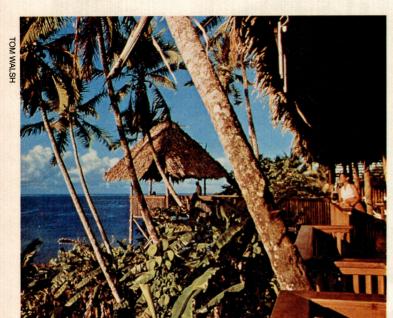
But mantas aren't the only attraction in Yap's marine environment. Yap's steep drop-offs, gradually sloping reefs, and current-swept channels are watering holes for sharks, eagle rays, turtles, a plethora of tropical reef fish, war wrecks and rare shells.

Any one of these destinations is well worth a visit, but if you want to experience Micronesia to its fullest, put them all on your itinerary.

POHNPEI TOURIST COMMISSION

P.O. Box 66 • Kolonia, Pohnpei FM 96941

011-691-320-2421 ext. R.O.D.



Dive Sites: Mwahnd Island Channel (Manta Road) - Known for numerous Manta Rays, white-tip sharks, colorful reef fish, different species of live coral rocks and soft coral. Location - channel off the northeast side of Mwahnd Island, northeast of Pohnpei Mainland, approximately 20 minutes by boat.

BLACK CORAL - Known for its giant Sea Fan Coral. Location - Southern fringing reef of Pohnpei mainland, approximately 45 minutes by boat.

BARRIER REEF PASSAGES - These three dive locations are all noteworthy for their different types of coral formation, varieties of reef fish, shark and turtles.

POAHLOANG PASS - Southwestern fringing reef of Pohnpei mainland, approximately 45 minutes by boat.

DAUAHK Pass - Western fringing reef of Pohnpei mainland, approximately 30 minutes by boat.

PALIKIR PASS - Northwest fringing reef of Pohnpei mainland, approximately 20-30 minutes by boat.

OUTLYING ATOLLS - The small islands surrounding Pohnpei are wonderful places for day or overnight trips. Black Coral, Heg's Island, Ant and Rainbow Islands are accessible by boat. The outer atolls of Mwoakilloa and Pingelanp have sandy beaches and are accessible by air.

ANT ATOLL - Ant Island has pristine white beaches and a clean, blue lagoon. Ant Channel is renowned for its steep vertical coral wall. Location - 8 miles southwest of Pohnpei, approximately 45 minutes by boat.

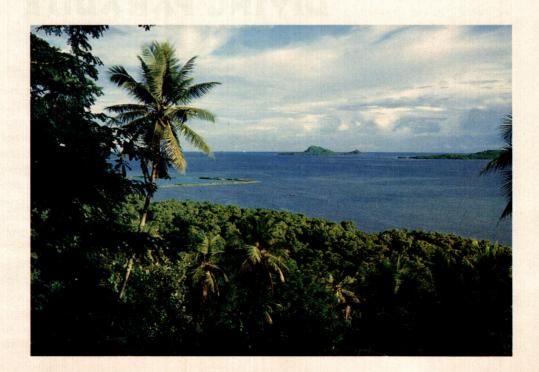
PAKIN ATOLL - Underwater visibility of 100-150 feet. Predominantly a wall dive with different types of coral formations, sea clams, shark and numerous varieties of reef fish. Location - Approximately 1.5-2 hours northwest of Pohnpei mainland.

Hotels:

Black Coral Island C-Star Apartelle Cliff Rainbow Hotel Harbor View Hotel Heg's Garden Island Hotel Pohnpei Joy Hotel Lenger Island Resort Pacific Skylite Hotel Palm Terrace Penny Hotel Sea Breeze Hotel Sea Side Hotel Snow Land Hotel South Park Hotel Village Hotel Yvonne's Hotel

Dive Operators:

Aqua World Blue Oyster Tours/Dive Shop let Ehu Tours Joy Ocean Service Palm Terrace Phoenix Marine Sports Club Village Hotel Tours



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Enjoy warm, crystal clear water, untouched reefs teeming with marine life, dazzling tropical caral and fish, breathtaking drop-offs and shark-filled passes. Visit Pohnpei's beautiful waterfalls and the mysterious ruins of Nan Madol.

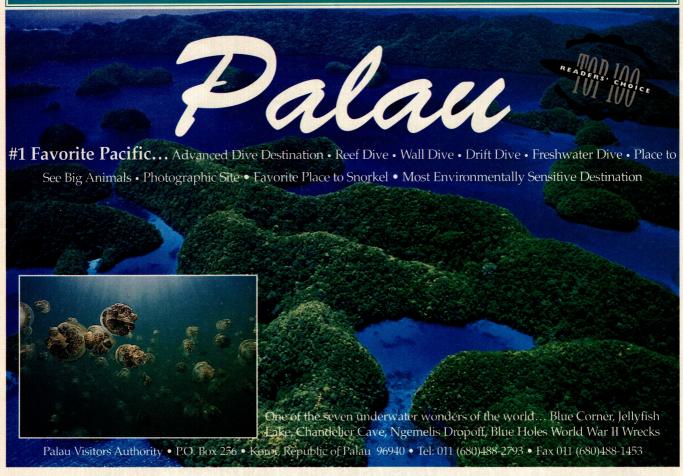
This and much more await you in the pacific paradise of Pohnpei.

Pohnpei Tourist Commission P.O. Box 66 • Kolonia, Pohnpei, FM 96941

011-691-320-2421 ext. R.O.D. • Fax 011-691-320-6019







CIRCLE NO. 111 ON READER SERVICE CARD

PALAU VISITORS AUTHORITY

P.O. Box 256 • Koror, Republic of Palau 96940

011-680-488-2793/1930 ext. R.O.D.

Dive Sites:

BLUE CORNER - A world class dive site where schools of barracuda, gray reef sharks, dog-tooth tuna and other fish surge along the steep drop-off, which is layered in a wide variety of hard and soft corals.

BLUE HOLES - Connecting underwater and opening to the walls on both sides, these holes lead to an underwater cathedral that opens onto a wall below.

NGEMELIS WALL - The Ngemelis area features more than 60 vertical drop-offs including "the world's best wall dive." Ngemelis Wall drops nearly 1,000 feet and reveals multi-colored sponges and the vivid hues of sea fans, black coral whips and soft corals.

SHARK CITY - Nurse, leopard, black-tip, and white-tip sharks make their home on this sloping reef. **CHANDELIER CAVE** - An underwater catacomb of rooms filled with massive stalactites and stalagmites.

JELLYFISH LAKE - One of Palau's truly unique attractions. Jellyfish in this isolated lake have lost their ability to sting, enabling snorkelers to swim amidst clouds of the harmless invertebrates.

GERMAN CHANNEL - Famous for the huge manta rays that enter the passage to feed at high tide.

WRECKS - The seas surrounding the Rock Islands are dotted with the sunken remains of more than 100 World War II shipwrecks, Japanese seaplanes and zeroes.

Dive Operators:

Antelope
Aqua Pro
Fish 'N' Fins
Inabo Diving Center
NECO Marine Corporation
Palau Diving Center
P.O.D.C. Blue Marlin
Sam's Dive Tours
Splash

Liveaboards:

Lesson Two "Palau Sports Ocean Hunter Palau Aggressor Sundancer Palau Sail Charter

Hotels:

Airai View Hotel
Carp Island Resort
D.W. Motel
H.K. Motel
Hotel Nikko Palau
King's Studio & Apts.
Palau Hotel
Palau Marina Hotel
Palau Pacific Resort

Storyboard Beach Resort Sunrise Villa The Carolines The Penthouse TNO Motel VIP Hotel West Plaza Hotels— (By the Sea, Topside, Downtown, Desekell



AGGRESSOR FLEET PALAU AGGRESSOR II AND TRUK AGGRESSOR II

P.O. Drawer K • Morgan City, LA 70381

800-348-2628, ext. R.O.D.

Features: Palau Aggressor II - 106 feet long, eight cabins; Truk Aggressor II - 110 feet long, seven cabins. Both feature large sundeck and hot tub, E-6 photo processing, dive gear and camera rentals, specialty photo courses. Palau Aggressor II \$1,995 per person. Truk Aggressor II \$1,895 per person. Both are all-inclusive except airfare and gratuities. Call reservations office for available trips.

"Could there be a more luxurious way to explore Palau's magical caverns, caves, coral gardens, marine lakes, blue holes, walls and wrecks than from aboard the new Palau Aggressor II? We doubt it. Respected underwater photographer/videographer Stan Waterman recently declared after a week aboard the Palau Aggressor II, 'I experienced the most comfortable, delightfully hedonistic dive tour in my memory. It is possible without hyperbole to consider this remarkable boat the

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most thoughtfully equipped, roomy and generously attended live-aboard dive boat in the world today.' What more can be said? Only that their new high-speed, jet-drive skiff lets you explore outer reefs as never before.

And there's no finer means of discovering Truk's legendary lagoon than from the Truk Aggressor II, a new, sleek 14-passenger monohull. You'll be enveloped by a rainbow of sea life inhabiting a sunken fleet of over 60 ships and planes. Then it's on to outstanding outer reefs in search of sharks, drop-offs and hidden treasures.



For Micronesia's most memorable diving adventures, climb aboard the Palau or Truk Aggressor II for the ultimate in live-aboard diving. For reservations or complimentary brochure, call 800-348-2628."

New L'Aventure Programs, featuring Jean-Michel Cousteau, offered aboard Aggressor Fleet vessels.



Truk Aggressor II - #1 Favorite Live-aboard in the Pacific Palau Aggressor II - One of Top Three Pacific Live-Aboards with the Best Food

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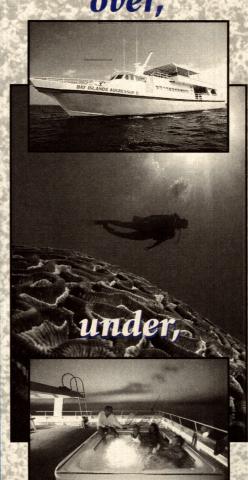
Bay Islands Aggressor II Belize Aggressor III Cayman Aggressor III Galapagos Aggressor Galapagos Aggressor II

Kona Aggressor II Okeanos Aggressor Palau Aggressor II Truk Aggressor II Turks & Caicos Aggressor



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BWI



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FISH 'N FINS

P.O. Box 142 • Koror, PW 96940

011-680-488-2637, ext. R.O.D.

Dive Sites: Blue Corner, Blue Hole, Big Drop-off, Turtle Cove, German Channel, Ulong Channel. In general: walls, channels, wrecks, caves, coral gardens.

Boats: Two 30', 10 diver capacity dive boats, two 25', 6-8 diver capacity dive boats, one 60' three-cabin live-aboard - Ocean Hunter.

Diving Services: All day diving with two-hour beach lunch \$85/day; snorkeling-\$45; night diving Sunday through Thursday \$50; computer diving; handicapped diver access.

Certification Services: NAUI Open-Water I.

Hotel/Diving packages (through Palau Marina Hotel located next door): \$130/day double, \$150/day single - includes 2-tank dive, hotel and hotel tax, breakfast, lunch, airport transfer.

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onderful sea-side cottages set among the beautiful Rock Islands will be the highlight of your stay. Dive the famous sites of Palau with our crew of experienced dive masters or let us take you fishing or touring.



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Carp Island Resort & Palau Diving Center

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P.O. Box 5 • Koror, Palau 96940

Tel: 011-680-488-2978, ext. R.O.D.

FAX: 011-680-488-3155

Accommodations/Amenities: 22 rooms - singles, double, triples, oceanview, natural ventilation, free boat transfers, diving, snorkeling, windsurfing, fishing, Rock Island tours, one restaurant serving breakfast, lunch and dinner.

Hotel/Diving packages-Best Buy: 5 days/4 nights, 5 2-tank boat dives, includes breakfast, lunch airport transfer, boat transfer to Carp Island, room tax, diving, tank, weight, belt. \$142.00/night per person double occupancy. Contact us for custom and Palau diveonly packages.



Dive Sites: All popular Palau dive sites including Blue Corner, Blue Hole, New Drop-off, German Channel, Ngemelis Wall, east side of Peleliu, Big Drop Off, Turtle Cove.

Boats: Three 30', 12 diver capacity; one 24', six diver capacity.

Diving/Certification Services: 2-tank morning dive \$90; snorkeling \$30; night diving \$65; computer diving; NAUI Open-Water; Japan Professional Divers Association basic course and open-water; C-MAS Open-water.

"Carp Island is the only private island resort in Palau, located closest to the most famous dive sites. Why spend an hour getting to them? We'll have you there in 10 minutes."

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CIRCLE NO. 110 ON READER SERVICE CARD

PALAU PACIFIC RESORT

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011-680-488-2600

FAX (680) 488-1606 or 1601

Accommodations: 160 guest rooms including eight suites. Award-winning international resort.

Rates: Rooms from \$195.00.

Amenities: SPLASH, on-site PADI 5-Star Dive Center with two custom-designed dive boats and PHOTO PALAU, a professional underwater video and camera center. The resort also has 1,000 feet of private sandy beach with excellent snorkeling right in front, plus many other amenities.



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Truk Continental Hotel

P.O. Box 340, Weno, Chuuk State, FSM 96942

Tel: 691-330-2438/2727 ext. **ROD** Fax: 691-330-2439 • SITA: TKKHTCO

CIRCLE NO. 115 ON READER SERVICE CARD

TRUK CONTINENTAL HOTEL

P.O. Box 340 WENO Chuuk State FSM 96942

011-691-330-2727/ 2438, ext. R.O.D.

Accommodations: 56 rooms w/ 2 dbl beds, pvt bath, vanity area, air conditioning, pvt balcony.

Rates: Deluxe single \$110; deluxe double/twin \$122; third person w/ extra bed \$37; 10% commission for agents. 10% government tax added to all rates.

Amenities: Main dining room for breakfast, lunch and dinner; handicrafts and sundries shop; cocktail lounge; beach bar; picnic area; gardens; private dock; dive shops pickup at hotel dock.

"The Truk Continental Hotel is the best location for land-based divers. All dive tours leave from our hotel dock and you'll enjoy good food and a relaxing atmosphere after returning from diving."



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WEST PLAZA HOTEL

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011-680-488-2133-5, 488-1671, 488-2251, ext. R.O.D.

FAX 011-680-488-2136 or 488-1783

Accommodations: 34 air-conditioned rooms, deluxe/standard/ocean view available, twin beds or double bed. Rooms include color TV, refrigerator, mini bar, telephone, some have kitchens.

Rates: Deluxe \$80; standard \$60; plus 10% government tax.

Amenities: One restaurant serving international cuisine and seafood specials, gift shop and car rental office on premises, bus service for city tour available with prior arrangement.



West Plaza Hotel also does business in two other locations, all in Koror City. These are:

- ► WEST PLAZA DOWNTOWN Room rates are: Deluxe \$65; Standard \$55; plus 10% government tax.
- ► WEST PLAZA HOTEL DESEKEL Room rates are: Deluxe \$80; Standard \$50; plus 10% government tax.

These hotels have modern comfortable accommodations and are centrally located in downtown Koror City.

"Our hotels are conveniently located near the shopping centers, restaurants and government buildings."

TRUK STOP HOTEL

P.O. Box 546 • Truk State, FM 96942

011-691-330-4232/33, ext. R.O.D.

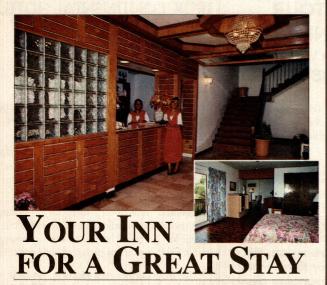
Accommodations: 23 rooms-13 standard, 6 ocean-view, 2 presidential suites and 2 executive suites. All rooms have private bath, air-conditioning, refrigerator, TV, ceiling fan. Presidential suites have small kitchens.

Rates: Standard \$90, deluxe oceanfront \$99, executive \$115, presidential suite \$130. Add 10% government tax to rates.

Amenities: Ocean-view restaurant, small handicraft and sundry shop, Blue Lagoon Dive Shop on premises.

"The Truk Stop Hotel was built with divers in mind and as an owner-operated hotel, we ensure responsiveness to the needs of our guests."





The Truk Stop Hotel is an owner-operated hotel located right on Truk Lagoon. The 23 guest rooms include standard rooms, deluxe ocean-front rooms, executive and presidential suites. Amenities include air-conditioning, private bathroom, refrigerator, telephone and color cable TV. The Truk Stop is within easy walking distance of shopping and dive facilities and the Truk Stop Hotel Restaurant is now open.



TRUK STOP HOTEL 011-691-330-4232 Fax: 011-691-330-2286

CIRCLE NO. 116 ON READER SERVICE CARD

MANTA RAY BAY HOTEL AND YAP DIVERS

P.O. Box MR Yap, FSM 96943

011-691-350-2300

ext. R.O.D.

Accommodations/Rates: 23 rooms, one suite with private jacuzzi. Air-conditioning, ceiling fans, mini bar, TV/VCR, phone, hair dryer, safe, etc. \$95-\$240/night.

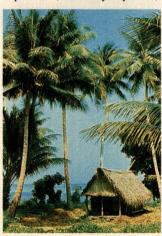
Amenities: Full-service restaurant, one snack bar, gift shop, dive retail store and full-service photo/video center, kayaks, waterskiing, walking tours and catch/release fishing charters.

Diving Services: Yap Divers on-site. Two dives \$95, one dive \$50, one night dive \$50, gear locker, rinse tanks, boat dock, E-6 processing, custom videos, shore diving.

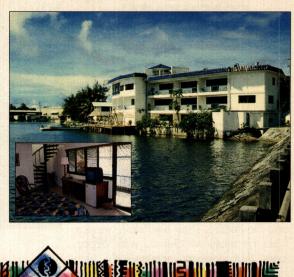
"We are a dedicated dive resort, designed and operated by divers for divers.

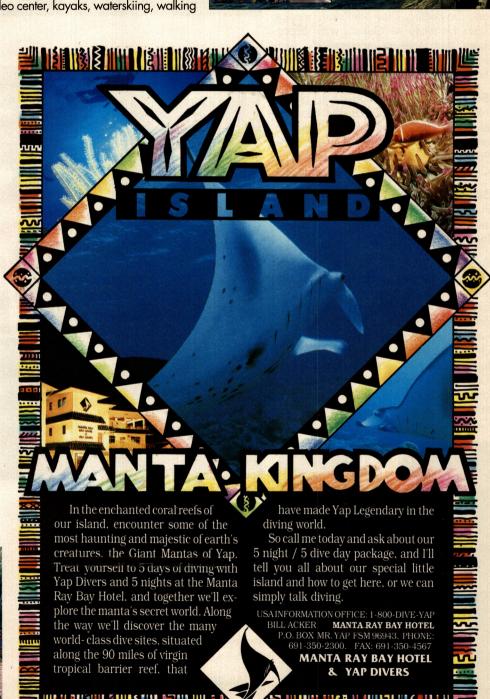
Our fleet of five dive boats means customized service with mare options."

Yap Divers (Manta Ray Bay Hotel)









CONTINENTAL MICRONESIA AIRLINES

North American Sales and Marketing Office

300 N. Continental Blvd., Suite 600 El Segundo, CA 90245-5022

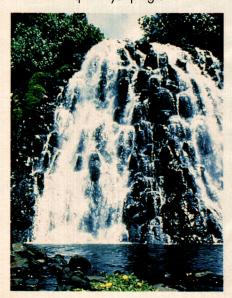
1-800-945-9955, ext. R.O.D. or 310-322-8100

Continental Micronesia, previously known as Continental Air Micronesia ("Air Mike"), offers 130 flights per week to more than 20 destinations in Asia and the Pacific. They offer daily service from Honolulu to Guam, with departures that connect conveniently with inbound flights from the mainland over both LAX and SFO gateways.

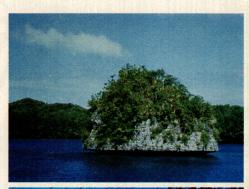
Serving: The Commonwealth of the Northern Mariana Islands, the Marshall Islands, the Federated States of Micronesia and the Caroline Islands, as well as the Philippines, Bali, Korea, Republic of China, Hong Kong and 7 cities in Japan.

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ISLANDS OF MICRONESIA

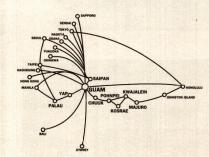
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Operation: Truk Lagoon and Micronesia Islands

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- TV/VCR, stereo in each guest room
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- Spacious guest lounge with aquarium and entertainment center
- Four customized 24-foot dive launches for maximum 6 divers each
- A personal dive guide and boatman on each launch
- Photography department with top-line video rentals, custom productions and E-6 processing.

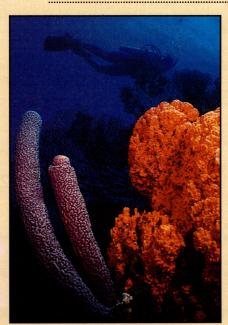
"The Pacific's largest and steadiest dive cruiser—the S.S. Thorfinn provides mare per-



sonal space and comforts than any other afloat. **Uncrowded** dives with expert local guides to five different dive sites daily."



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These four semifinalists have won a Sea & Sea Marine Watch for their entries in the 1995 Sea & Sea/ Rodale's Scuba Diving Photo Contest. Look for the Grand

Grand Prize is a complete Sea & Sea housed camera system including: SX-1000 Housing, SX-120 1000TTL camera, SX28-70mm F3.5-4.5 zoom lens, YS 120 Duo Strobe. The Grand Prize winner will be selected from 12 semifinalist entries.



NICHOLAS ARMY · VAN WERT, OH.



M.L. THOMAS · MANASSAS, VA.

Are you a Reef

When you dive, are you an eco-angel or a one-person environmental hazard?

While you might think diver damage is not the most serious threat facing the world's oceans, the azure vase sponge unceremoniously ripped from the reef by an errant fin kick might disagree.

Take our quiz to find out how your diving and the practices of the operators, resorts and destinations where you spend your money

measure
up. Grab a
No. 2 pencil for this
test—and
your dive

slate.



I. During an hour-long dive, the average diver touches a reef:

- a) 1 or 2 times
- b) 5 to 10 times
- c) 10 to 15 times
- d) 20 or more times

2. To keep your gauge console from bumping and dragging across the reef, you:

- a) leave it in the personal safe in the hotel
- b) fasten it securely to your BC
- c) hold it in your hand, so you can check your depth and air supply easily
- d) let it dangle, but swim well above the

3. If you see a shark in the distance, the best and safest way to get close to it is:

- a) have your buddy herd it toward you, eventually sandwiching the animal between your buddy and you
- b) orient yourself horizontally near the bottom and hum into your regulator
- break apart a bottom-dwelling critter, place it on a sandy area of bottom, and retreat to a distance of 15 feet or more
- d) none of the above

4. Having mastered buoyancy control, you know that:

- a) you can hover motionlessly over the reef
- b) you can descend to the reeftop and then add air to your BC to float above the reef
- c) your position in the water column will change slightly as you breathe
- d) you can turn somersaults over the reef like a waterborne acrobat

5. During night dives, shining a dive light on sleeping reef critters harms them by:

- a) startling them awake, after which they are likely to crash into their crevice walls and injure themselves in the attempt to escape
- b) revealing their presence to predators, making them more likely to be eaten
- c) upsetting their circadian (day-night) rhythms, causing them to be active at inappropriate times
- d) none of the above

6. You want to get close to the reef for a look at the tiny critters. In order to do so, you:

a) orient yourself horizontally (before moving in), so there's a straight line

from your head to your fin tips

- b) swim slightly head-up to keep your hair from caressing the coral
- swim slightly head-down to keep your fins off the reef
- d) float vertically, head-down, to get as close as you can to the reef without touching it

7. The most ecologically friendly way to navigate through an arch-like reef structure is to:

- a) assess whether the arch is large enough to allow a diver through, then proceed single-file with your buddy
- b) use a gentle frog-kick, so you do not disrupt bottom sediment by forcing water downward
- c) follow a U-shaped path through the arch, avoiding exhaling while under the arch itself
- d) all of the above

8. The seahorse you need to complete your photographic portfolio is hanging unartfully from a sea rod, behind a seafan, in the shadow of a coral ledge. What do you do?

- a) Snap the shutter and hope that once the film is developed you can still make out the vague shape of a seahorse
- b) Carefully move the seahorse to a more aesthetically pleasing location, snap the shot and move on
- c) Move the seahorse, take the photo and then carefully replace the seahorse where you found it
- d) Move the seahorse, take the shot and then stick the seahorse in your BC pocket to take home to the kids

9. It is possible to encourage an octopus to come out of its grotto without harming it by:

- a) squirting hydrogen peroxide—which is unpleasant but nonlethal to an octopus and breaks down into neutral substances—into the grotto
- b) offering leftover seafood, such as fish or conch
- using a burst of air from your alternate air source to startle it out into open water from behind
- d) none of the above

10. You start your dive empty-handed and return:

- a) empty-handed
- b) with a pocket full of goodies to liven

INSTRUCTION

Wrecker?

- up the saltwater aquarium back home
 c) with only nonliving souvenirs—empty
- with only nonliving souvenirs—empty shells, a chunk of dead coral, a handful of sand
- d) with a couple feet of fishing line, an empty aluminum can or a spent cyalume light stick

II. Rubbing a pufferfish or porcupinefish until it inflates itself is not a good idea because:

- a) it causes the fish to invest some of its energy in what it doesn't know is needless self-defense, making less energy available for growth, reproduction, self-maintenance or predator evasion
- b) it makes the fish vulnerable to large predators for many minutes, because it is conspicuous, unable to maneuver well, and cannot expel the water as quickly as it ingested it
- c.) the fish has sharp buckteeth and powerful jaw muscles, and can easily snap off a diver's fingers like carrot sticks
- d) all of the above

12. The purpose of dive gloves is:

- a) to protect hands when gripping a line while you're descending, ascending or hanging
- b) to keep your hands warm
- c) so you don't get cut when holding the reef to steady yourself under water
- d) to avoid being stung by the reef's hidden creatures: fireworms, coral polyps, hydroids

13. The most ecologically friendly way to get close to a sea turtle is:

- a) approach from directly behind, taking care not to move out from behind the turtle until it has moved 10 or more feet away
- b) herd the turtle between you and your buddy
- c) wait until the turtle surfaces for a breath of air, then approach it at the surface
- d) none of the above

14. Before leaving home for a dive destination, you:

- a) clean, oil and pack your powerhead
- b) buy plenty of Cheez Whiz to feed the fish
- c) research local restaurants to find out which one makes the best burritos
- d) research local environmental issues
- 15. On a dive, you notice a diver from

your boat handling a pufferfish so that it will puff up nicely for a photo. What do you do?

- a) Act like you didn't see it
- b) Catch the diver's eye and shake your head disapprovingly
- c) Once back on the boat, explain to the diver that by handling the fish, he induced an unnecessary and unnatural stress that may shorten the fish's life
- d) Swim past the diver and "accidentally" dislodge his mask with your fin tip

16. When swimming over the bottom you should:

- a) ensure that your fin tips don't touch anything
- b) stay high enough so that water pushed by your fins does not disturb sand or sediment
- c) look ahead and navigate carefully using underwater features for reference
- d) stay within one arm's length of your dive buddy

TRUE OR FALSE

The point here is not whether you know the eco-friendly answer, but whether you do the right thing. Give yourself one point for each question that you can honestly answer "true."

On your last dive trip, you dived with an operator that:

- educates clients about environmentally considerate diving
- follows safe anchoring and mooring practices
- contains waste from heads until they return to dock
- separates waste for recycling
- discourages feeding fish, or playing with slow-moving fish
- upholds environmental laws and bag
- leaves the dive site cleaner than it was

On your last dive trip, you stayed at a resort or hotel that:

uses a natural harbor that required no dredging for construction or maintenance

supports indigenous businesses by buying local goods and services

promotes environmental research programs

On your last dive trip, you visited a destination that:

- establishes marine refuges to preserve the vitality of dive sites
- sponsors environmental education programs
- enacts adequate environmental protection laws
- links commercial tourism to local conservation programs

SCORE YOURSELF

Award yourself one point for each question in the multiple-choice section that you answered correctly (see page 115 for the answers) and one point for each question in the True/False section that you answered "true."

20-30 GREEN DIVER

Not only do you know what to do, you spend your money with folks who are equally eco-conscious. Now, take that knowledge and spread it around.

10-19 YELLOW DIVER

Chances are you know enough to stay off the reef, but you haven't given as much consideration as you should to the practices of the operators, resorts and destinations where you're spending your money. Use the true/false list to ask the hard questions when you book your next dive trip.

0-9 RED DIVER

Please consider staying out of the water until you can improve your score.

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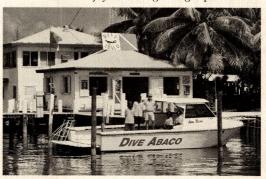
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CONSERVATION

SEA HUGGERS

COMPILED BY UNNDÓR JÓNSSON

ave the whales! Save the reefs! Save the oceans! Give us your money." We're tempted to throw beg-mail in the trash. But as divers, we want a healthy marine environment, and until we can trust the world's governments to do something about it, we'll have to pay for it ourselves. But who should we pay?

Most of us can afford the price of a one-tank dive to support an environmental group that is working for a cause vital to our planet's well-being. That's why we searched through the maze of conservation groups to find the ones most important for divers to support. Each group is different—some comb beaches and take ocean samples, others confront French marines, others lobby politicians, and some do solid and much-needed scientific research. But each is working to preserve our oceans for the future. Now pick your favorites and get out your checkbook.

AMERICAN OCEANS CAMPAIGN

725 Arizona Ave., Suite 102 Santa Monica, CA 90401 (310) 576-6162; fax: (310) 576-6170

Founded: 1987 Membership: 2,000 Annual dues: \$25

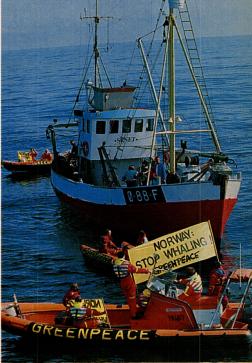
Mission: "To protect the vitality of America's and the world's coastal waters, estuaries, bays, wetlands and deep oceans."

Accomplishments: The first group to warn the public about health risks of swimming in Santa Monica Bay due to toxic chemical runoff after rainstorms and sewage spills. Used congressional moratoriums to block lease sales for offshore gas and oil development in several

Your buck stops here. A hands-on guide to marine conservation groups.







360 DEGREES OF CONSERVATION: FROM OCEANOGRAPHIC EXPEDITIONS' LOW-IMPACT RESEARCH DIVER COURSE (TOP), TO CMC'S HANDS-ON BEACH CLEANUPS (ABOVE, LEFT), TO GREENPEACE'S FULL-CONTACT CONFRONTATION WITH NORWEGIAN WHALERS.

R FOR MARINE CONSERVATION; GREENPEACE MORGAN

coastal states.

What are they doing now? Rallying members to oppose the weakening of the Clean Water Act. Working with the city of Los Angeles to implement a used motor oil recycling program to keep oil out of the sea. Studying the flow of chemicals during rain and the effect on people exposed to these chemicals. Expanding their underwater cleanup program in California to the national level. Seeking diver support for legislation mandating ocean protection.

What you get: An active California ocean Founded: 1972 conservation group founded by actor Ted Danson and environmentalist Robert Sulnick with an impressive record on issues important to divers.

CENTER FOR MARINE CONSERVATION

1725 DeSales St., NW Washington, DC 20036 (202) 429-5609; fax: (202) 872-0619 Membership: 120,000 Annual dues: \$20

Mission: The CMC focuses on three areas of marine conservation: "Overexploitation of fish and other marine wildlife; physical alteration of marine ecosystems; pollution in all its forms." Accomplishments: Helped fund the research and development of turtle excluder devices (TEDs), then lobbied successfully for laws that require the use

international coastal cleanup program. What are they doing now? Lobbying for reauthorization of the Clean Water Act as a member of the Clean Water Network. Lobbying for reauthorization of the



THURSDAY OF MERCEN

THE ANTARCTICA PROJECT (202) 544-0236

Leaders of the Antarctic and Southern Ocean Coalition-comprised of 200 member organizations from 50 nations-lobbying for minimal human impact on the continent and creating a safe haven for marine mammals around this last frontier.

THE MARINE FISH CONSERVATION NETWORK

(202) 546-0707

A network of 90 organizations that coalesced to lobby for a stronger version of the Magnuson Fishery Conservation and Management Act in order to reestablish a healthy population of harvestable marine fish for the long-term.

THE NATURE CONSERVANCY (800) 84-ADOPT, (703) 841-4860

A multimillion-dollar conservation group that donates funds from its Rescue the Reef program to coral reef protection in the Florida Keys, Palau, and Parque del Este, Dominican Republic.

OCEANWATCH (703) 356-2670

A growing Virginia-based group that promotes the ocean through education programs at the National Aquarium in Baltimore. Constructed sand fences to protect dunes on Assateague Island, Va. Need support to expand their volunteer and educational programs to aquariums across the United States.

For a list of other noteworthy conservation groups and how to dive with them, refer to the Volunteer Directory in "A Year's Worth of Volunteer Dives," pg. 52.

Endangered Species Act and the Magnuson Fisheries Conservation and Management Act. Continuing pollution education programs and funding marine research programs.

What you get: One of the larger conservation groups dedicated exclusively to the water world. In addition to lobbying and funding research efforts, CMC gives you a chance to get involved by helping collect and document the 5.2 million pounds of trash they remove from our beaches annually.

CONSERVATION INTERNATIONAL

1015 Eighteen St., NW Washington, DC 20036 (202) 429-5660, (202) 887-5188

Founded: 1987 Membership: 6,000 Annual dues: \$25

Mission: "To preserve biological diversity and the ecological processes that sustain life on earth" through economically based solutions in developing countries.

Accomplishments: A worldwide environmental record, including two marine conservation programs in Mexico's Sea of Cortez and in the Pacific. In Mexico, CI defined biodiversity hot spots and helped communities implement a management plan for the Upper Gulf of California Biosphere Reserve. Similar programs in Indonesia and the Philippines have focused on ecologically sound uses of natural resources, specifically targeting the elimination of dynamite fishing.

What are they doing now? Working to create a marine reserve in the Togian Islands, Indonesia. Promoting the conservation of the Tubbataha National Marine Park—a World Heritage Site—in the Philippines by educating native fishermen about the dangers of dynamite fishing. Trying to reverse the decline of the Vaquita dolphin in the Gulf of California, Mexico, by establishing reserves encompassing its critical habitats.

What you get: A group of professional marine biologists, economists, forestry experts, lawyers and computer software developers who work with local cultures to harvest the sea without harming the environment in some of the world's most biologically diverse and sensitive areas.

CORAL (CORAL REEF ALLIANCE)

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E.R. Gammill

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CIRCLE NO. 18 ON READER SERVICE CARD

Founded: 1994

Membership: 1,050 paid members, 4,200

supporters

Annual dues: \$20

Mission: "CORAL works with divers around the world to keep coral reefs alive ... through financial contributions and direct participation in conservation and research projects."

Accomplishments: Created the CORAL Diver Network on the Internet, where divers report and share information on coral reef conditions worldwide. Contact: http://www.cea.edu/coral, or e-mail: CORALmail1@aol.com. Distributed and sponsored circulation of educational material about coral reefs to divers. Helped divers, dive shops and clubs to form local chapters of CORAL and take the CORAL Diver Pledge. Represented the dive industry at 1995's International Coral Reef Initiative in the Philippines (an international marine reserve information and research exchange network).

The Quality

What are they doing now? Co-chairing the Public Awareness Committee designed to educate the public and plan events for the 1997 International Year of the Reef. Creating a long-term fund to support local conservation of marine protected areas.

What you get: A small but growing group that focuses on divers as effective supporters of coral reef conservation. Although young, CORAL has a record of domestic and international conservation efforts and might be just what hands-on, action-hungry divers want.

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THE COUSTEAU SOCIETY

870 Greenbrier Circle, Suite 402 Chesapeake, VA 23320-2641 (804) 523-9335; fax: (804) 523-1909

Founded: 1973 Membership: 300,000 Annual dues: \$25 to \$35

Mission: "Dedicated to the protection and improvement of the quality of life for present and future generations," through an informed and educated public.

Accomplishments: Founded by the grandpère of scuba diving, Jacques-Yves Cousteau, the society has been instrumental in bringing the ocean world to life for the general public with award-winning books, films and TV documentaries, including one of the most popular underwater series on television, "The Undersea World of Jacques Cousteau."

What are they doing now? Two vessels, the Calypso and the wind-powered Alcyone, continue their ongoing research of the world's water systems. The society continues to speak on behalf of the environment to governing bodies and world leaders. Jacques Cousteau will present a petition for the Bill of Rights for Future Generations—a declaration to protect the right of future generations to inherit an intact environment—to the United Nations this fall, accompanied by nine million signatures.

What you get: One of the world's premier marine environmentalists, and his team of photographers and scientists, who disseminate the results of their research and exploration to the world.

EARTH ISLAND INSTITUTE

300 Broadway, Suite 28 San Francisco, CA 94133-3312 (415) 788-3666; fax: (415) 788-7324

Founded: 1982 Membership: 95,000 Annual dues: \$30 Mission: "To make oceans safe for marine mammals worldwide."

Accomplishments: Successfully pressed for dolphin-safe tuna fishing practices and monitored their implementation. Helped Russian environmentalists protect Lake Baikal. Fought successfully for wetlands restoration in Southern California.

What are they doing now? Fighting against commercial whaling. Researching high levels of toxins in San Francisco Bay harbor seals. Lobbying for California Assembly bill 1737, which would prohibit "display and possession of newly captured" marine mammals in aquariums.

What you get: A large organization making emotional appeals for the conservation of marine mammals, founded by ecocelebrity David Brower, Sierra Club's former executive director.

GREENPEACE

1436 U St., NW Washington, DC 20009 (202) 462-1177; fax: (202) 462-4507

Founded: 1971

Membership: 4,000,000 Annual dues: \$30

Mission: "Actively working to preserve the global environment ... through nonviolent direct action, public education and grassroot organizing."

Accomplishments: Supported a number of initiatives, including the International Whaling Commission's moratorium on commercial whaling; a moratorium on dumping radioactive waste in the oceans; the ban on ocean incineration of waste in the United States; a U.N. ban on drift nets; and creation of a whale sanctuary in the seas surrounding Antarctica.

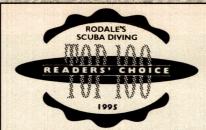
What are they doing now? At press time, trying to stop the French from resuming nuclear testing in the Pacific.

What you get: A high-profile, mediasavvy group with a massive following (1.6 million members in the U.S. alone), and almost as many critics. Your \$30 might not make or break Greenpeace's multimillion-dollar budget, but if you want to see your contribution at work on the 6 o'clock news, you'll get your money's worth.

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Founded: 1986 Membership: 2,000



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Annual dues: \$20

Mission: "To preserve and protect the living coral reef of the Florida Keys."

Accomplishments: Instrumental in raising awareness of declining water quality in the Keys and pressing for tougher regulations of sewage disposal. Began a pro-

gram of installing mooring buoys. Reef Relief currently maintains 116 buoys off Key West. Used its \$10,000 Robert Rodale Environmental Award to start a photomonitoring project of Florida Keys reefs and discovered a previously unknown disease attacking some corals in the Lower Keys.

What are they doing now? Monitoring water quality in the Keys and ensuring that recent regulations on injection wells are followed. Researching yellowband disease affecting coral.

What you get: A dedicated group of Florida Keys locals focused on the health of the United States' largest reef tract.

REEFKEEPER INTERNATIONAL

2809 Bird Ave., Suite 162 Miami, FL 33133 (305) 358-4600; fax: (305) 358-3030

Founded: 1989

Membership: 450 individuals, 300

groups

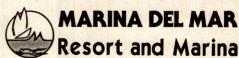
Annual dues: \$25

Mission: "Dedicated to the protection of coral reefs and their marine life."

Accomplishments: Testified for establishment of a no-trawling zone around the fragile Oculina Coral Banks off central Florida. Successfully lobbied for nodredging buffer zone near coral habitats in southwest Florida. Supported the elimination of live-rock collecting in the Gulf of Mexico by the end of 1996. Requested no-dredging zone near Hawaii's coral

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reefs. Presented an environmental assessment report to the Island Council of Curação that supports protection of the island's Eastpoint Reefs.

What are they doing now? Fighting construction of a cruise ship pier on Cozumel's Paradise Reef. Submitting a request to participate in the U.S. Coral Reef Initiative and International Coral Reef Initiative as a nongovernmental organization. Conducting a petition drive in the South Atlantic and Gulf of Mexico regions to ban wire-mesh fish traps disguised as lobster traps.

What you get: An affiliate of the American Littoral Society and a conservation group that concentrates on areas of concern to divers and mutually supports like-minded dive professionals and organizations.

SURFRIDER FOUNDATION

122 S. El Camino Real #67 San Clemente, CA 92672 (800) 743-SURF, (714) 492-8170

Founded: 1984 Membership: 25,000 Annual dues: \$25

Mission: "Dedicated to the protection and enhancement of the world's waves and beaches through conservation, activism, education and research."

Accomplishments: Halted disposal of hazardous waste from two pulp mills into the surf zone off Humboldt County, Calif., the second-largest Clean Water Act suit to date. The mills paid \$5.8 million in fines and \$50 million cleaning up their toxins. A variety of successful coastal restoration programs, from building up the dunes along North Carolina's Outer Banks, to mapping the location of storm drainage outfalls for regional water-quality control boards and city planners near coastal beaches.

What are they doing now? Continuing programs in which members help monitor water and beach quality.

What you get: A grassroots, activist group of surfers and divers who are stoked for protecting the coastal environment.

WHALE CONSERVATION INSTITUTE

191 Weston Rd. Lincoln, MA 01733

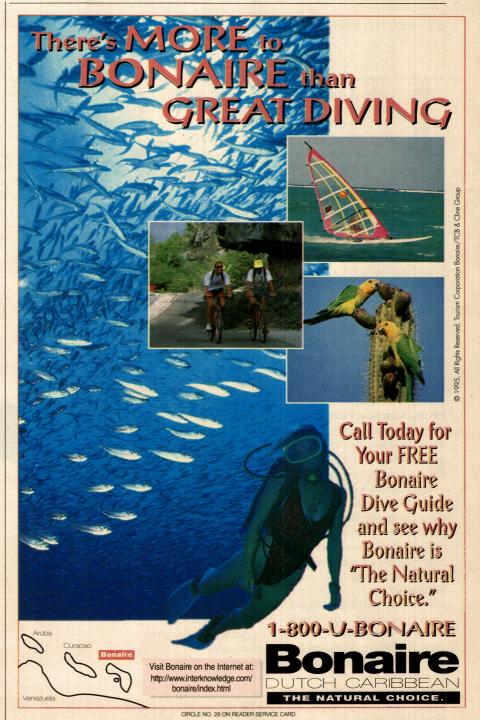
(617) 259-0423; fax: (617) 259-0288

Founded: 1971 Membership: 1,000 Annual dues: \$15

Mission: "To protect and conserve whales through research and international educational initiatives." Accomplishments: Founded by Dr. Roger Payne, who helped pioneer research on humpback whale songs. WCI has monitored four generations of southern right whales in Argentina—the longest ongoing study of a specific whale population to date. Has increased awareness and provided educational material with numerous films and magazine articles about whale research in the past 25 years.

What are they doing now? Starting a fiveyear program—the ECOTOX programto study the accumulation of toxins in the ocean and how marine mammal immune systems are affected. Attempting to determine if recent pox-like skin lesions on southern right whales are related to toxin accumulation.

What you get: Some of the world's fore-most whale scientists performing continuous whale research from a specially designated whale research vessel. Long-term conservation through educational programs.



FIELD NOTES

SUDDEN IMPACT

BY RICHARD MARTIN

nteracting with marine life one of the greatest pleasures of our sport. To come face-to-face with a wild animal in its natural environment is a powerful remedy for our self-made prisons of steel, concrete, laws and conventions. And who among us has not dreamed of riding a giant manta ray or stroking a wild dolphin?

In truth, few wild animals benefit by contact with us—and some may be harmed by our actions. Every living thing has a finite energy budget, and calories that go into self- or home repair are no longer available for ther uses—including locomotion, growth or reproduction. Does that mean that during dives we shouldn't interact with the residents? Not necessarily. But it is important that we understand the effects of our actions and use that knowledge to minimize our negative impact.

ONE SMALL STEP FOR MAN, ONE GIANT NUISANCE FOR FISHKIND

The very act of entering the ocean can cause massive disturbances. The classic giant-stride entry we're taught to use when diving from a boat is easy and fun. But it's also riotously noisy, alerting every living thing in the area to duck for cover or zip away at Warp Factor 8. If you think about it, using the giant-stride entry is rather inconsiderate of the residents. Consider that many reef fish spawn off the outer reef face, where the water is clear for sexual signaling and gentle currents can carry fertilized eggs offshore and away from the many hungry mouths of the reef. A large monkey dressed in neoprene unexpectedly leaping on top of a mating pair of fish does more than cramp a fish's style—it interrupts mating behaviors that are absolutely vital to a species' survival. In addition, in the great splash and confusion following a giant stride, predators may opportunistically seize prey temporarily startled into indecision. To reduce your impact on the environment, enter the sea quietly using a seated entry. If your reputation doesn't precede you, you'll vastly improve your chances of seeing skittish creatures and observing interesting behaviors.

GIVE 'EM SPACE

We've all heard about the negative impact of bumping coral and feeding fish. But the workings of nature are more complex than our green truisms. For example, many believe that by kneeling on an area of open sand or rock, they do not adversely affect

the environment. Yet living space is one of the most

96 · RODALE'S SCUBA DIVING

precious commodities in the ocean and many delicate creatures—algae, bivalves, worms, sea urchins, starfish, sea cucumbers and fishes—live on or in the substrate. Not only can these cryptic critters be crushed or killed by a diver's weight, but their burrows can also be destroyed.

In order to avoid harming bottom-

These low-impact diving techniques will not only reduce your effect on marine critters, they might help you make a few friends.

dwelling organisms, be sure that you are correctly weighted and your buoyancy skills are honed. If you maintain neutral buoyancy at all times during a dive, you'll have no reason to make contact with the bottom. After all, you don't want a reputation as a home wrecker.

CUT THE CHASE

You'll also see more if you behave yourself when you get under. For instance, there's not much point in chasing around marine critters. No matter how good a swimmer you are in human terms, by the criteria evolved over millions of years by life in the sea, you are clumsy and awkward. Just about everything in the sea can outswim you. By chasing marine life, a diver not only wastes his energy but also that of the creature he wants to get close to.

Critters have no way of understanding that you mean them no harm. Poking a "sleeping" fish to see if it's really asleep can cause it to injure itself in a panicked attempt to flee. Contrary to what you might have read, it may take minutes to provoke a pufferfish or porcupinefish to inflate itself. Similarly, it requires an awful lot of prolonged squeezing to force a sea cucumber to expel its internal organs as an escape mecha-

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nism—these organs will eventually be regrown, but only by co-opting calories that could have gone into other activities (like, say, ballroom dancing).

In addition, many marine animals are delicate and can be easily injured or killed as a result of being handled by a diver. Sea fans and sea rods, for example, are unlikely to be harmed by a gentle touch, but wrapped around their stems and living among their polyps is a veritable zoo of delicate creatures—including

brittle stars, tiny shrimps, snails and gobies.

ACT LESS STRANGE-HUM UNDER WATER

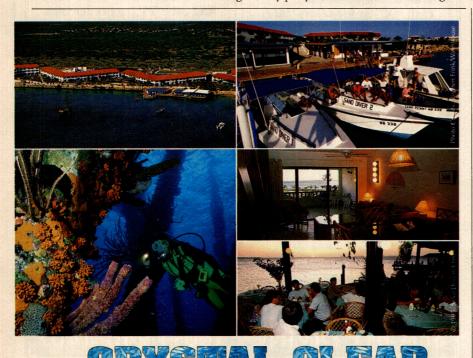
In order to get close to marine creatures, it is best to be as nonthreatening as possible, and try to be interesting in some way. I don't mean to imply anything without having met you. For all I know, you're a marvelous conversationalist and the life of every party. But marine critters don't go to many parties. In general, maintain a horizontal position in the water column; this reduces your strangeness as most swimming creatures are longest in the direction of travel. Rather than chasing marine life, try hovering motionless near the bottom, oriented horizontally. In a few minutes (be patient), the local soggy set will come and check you out. Here's where the "being interesting" part comes in. Sharks, for example, are notoriously uninterested in divers. Rather than feeding a shark in order to compel it to stick around for a while, try humming into your regulator. Almost anything composed of low notes and a simple, but not-too-regular rhythm works well. "Waltzing Matilda" has always worked for me, although the theme from "Gilligan's Island" may be more to your taste. Making low, rhythmic sounds reduces your strangeness and gives residents a sense of what kind of creature you are.

SHUTTERBUGS

This brings us to a very special type of creature: the underwater photographer. For photographers, the underwater realm offers some challenging technical problems and a dazzling array of exotic subjects. But many photographers show no compunction in "improving" nature's composition by moving a nudibranch, shrimp or frogfish next to a colorful sponge to make a more dramatic picture. It is very easy to injure such tiny creatures by attempting to move them; some critters, such as crabs, will actually sacrifice a limb rather than be captured. If you must move a critter, as a rule of thumb, push rather than pull small animals, as body projections such as limbs or antennae can easily break off. Equally as important, the photographic subject must be put back exactly where it was found. Especially on coral reefs, ecological niches are divided up very finely. Two crevices or hollows may look the same to you or me, but for reef critters they may offer vastly different shelter-and dangers.

The keys to being an environmentally friendly diver go far beyond simply not crashing into coral or feeding fish. Empathy and respect for the residents are also important. Move slowly and quietly. Allow creatures to come to you, rather than vice versa. And resist the urge to handle the natives. If you do your best to be a well-mannered visitor, you'll be welcomed back.

Marine biologist Richard Martin lives in Vancouver, British Columbia.



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CIRCLE NO. 27 ON READER SERVICE CARD

VOLUNTEER DIVES

(Continued from page 51)

PREREQUISITES: Certified divers, preferably advanced open-water.

WHY DO IT: Help preserve the most extensive reef system in the Western Hemisphere.

Adopt-A-Reef

Florida Keys National Marine Sanctuary

MISSION: To "adopt" a reef and keep it clean. This is the underwater version of the nationwide Adopt-A-Highway program. Jointly sponsored by FKNMS, The Bacardi Foundation, The Nature Conservancy and local dive operators.

WHAT YOU'LL DO: After receiving training in proper reef clean-up techniques, volunteers collect marine debris and use cutters to remove monofilament line.

DATE AND COST: Saturdays and Sundays in the

PREREQUISITES: Certified divers. Boat owners are also needed.

WHY DO IT: Insufficient localized spawning and larval influx have prevented queen conch populations from rebounding to healthy levels. Divers can help the conch recover and help scientists determine factors necessary for survival of hatchery-reared animals.

Rapid Response Initiative

ReefKeeper International

MISSION: To empower local citizen groups with site-specific environmental assessments that can be used to protect reefs from imminent damage or destruction. Remember "Mission Impossible"? ReefKeeper expeditions are planned on short notice in response to threats to reefs in Florida and the Caribbean.

WHAT YOU'LL DO: Depends on the project. In

the past, volunteers have surveyed bottom cover, counted and identified reef fish, and photographed reefs.

DATE AND COST: Dates vary. Volunteers pay their own airfare. Lodging and meals are sometimes provided at no cost. Diving is free.

PREREQUISITES: Must be in good physical condition; possess U.S. citizenship (where needed) and DAN insurance; have own dive gear.

WHY DO IT: An environmental assessment of the effect of the planned cruise ship pier on Cozumel's Paradise Reef spurred efforts to halt its construction. In Curaçao, ReefKeeper determined that coastal development projects would harm fringing reefs and prompted local groups to fight the plans. At press time, ReefKeeper was under water in Golden Beach, Fla., to determine the impact a proposed dredging project would have on offshore reefs.

Make your dives
count: Adopt a
reef in the Keys;
count fish in
Belize; track
conch with metal
detectors; save an
island in the
Philippines.

spring and fall. Reduced rates from dive opera-

INCLUDES: Training program.

PREREQUISITES: Excellent buoyancy skills.

WHY DO IT: This is America's only coral reef tract. Help keep it clean.

Queen Conch Research

Florida Keys National Marine Sanctuary/Florida Marine Resources Institute

MISSION: To assist in planting and monitoring hatchery-reared queen conch that have been tagged.

WHAT YOU'LL DO: Hand-plant conch and monitor movement with underwater metal detectors. Three volunteers are needed to dive four days a week during planting periods. Three volunteers are needed to dive twice a week for 12 weeks after planting.

DATE AND COST: Through October 1996. Planting periods are in January, April and July.

INCLUDES: On-site training.

Oceanwatch

Marine Conservation Network

MISSION: To preserve and protect the marine environment of northern and central California through monitoring activities, educational programs and publications.

WHAT YOU'LL DO: After receiving training, volunteers use standardized log sheets, and still and video photography to document observations and changes to underwater habitats, including sightings of unusual species and damage to the habitat.

DATE AND COST: Training seminars are scheduled throughout the year. The annual fee is under

INCLUDES: Training program, workbook and newsletter.

PREREQUISITES: Certified divers familiar with California diving conditions. Nondivers, snorkelers and free divers are also needed.

WHY DO IT: Go west, young diver. The Marine Conservation Network is committed to preserving this part of the California coast and instilling that commitment in recreational divers.





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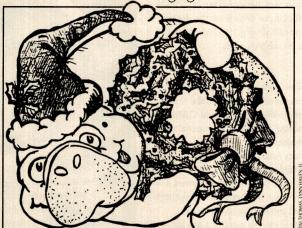
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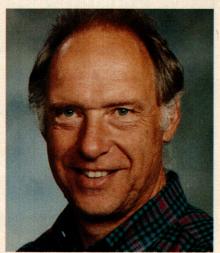
(Continued from page 48)

for heroic deeds.

"In terms of continued, long-term leadership for sanctuaries, there's no question that person in Washington has been Leon Panetta," says Rachel Saunders of the Center for Marine Conservation in Monterey. Panetta, who held Farr's seat before becoming Bill Clinton's chief of staff in 1994, vowed to fight for the bay in the early 1980s when the Reagan administration announced plans to drop it as a sanctuary candidate. He made good on the promise in 1988 when he spearheaded legislation to push not only Monterey Bay toward designation, but a half-dozen other sites as well.

Panetta's and Farr's efforts required the help of something the environment is coming to depend on more and morebipartisanship. Former Republican Congressman Tom Campbell helped persuade NOAA to extend the sanctuary's proposed boundaries north into his San Mateo district. Republican governor Pete Wilson played a key role in getting then-President George Bush to sign off on Monterey Bay in 1992. In fact, if Farr is to realize one of his future environmental goals—a marine management plan for the entire West Coast, including Alaska and Hawaii-he'll have to maneuver across a logiam of state and party barriers.

"The abuses of ocean resources don't respect political boundaries," he says.



* CHARLES JURASZ Watching whales before whale watching was cool.

In the world of whale research, Charles Jurasz is a true pioneer. Long before whales became a fashionable environmental symbol and whale watching

became a leisure activity, Jurasz was out in Glacier Bay, Alaska, tooling around in a 14-foot skiff, snapping photographs of humpbacks and freezing his buns off.

"I wore this big, fleece-lined coat, but there were many days when I wondered why I was out there doing it," Jurasz recalls. Indeed, there seemed to be little reward. When Jurasz dutifully reported his big find—the then-radical notion that he could identify individual whales by their black and white tail patterns with the help of photo documentation—academics in the field openly scoffed at him.

"I really respect guys who early on come up with something completely unique and it turns out to be right," says Sally Mizroch, a whale specialist with the National Marine Mammal Laboratory. "Chuck and a few other guys were saying, 'Hey, I think I can tell these animals apart,' and they went through hell for believing that."

Jurasz, now 56, proceeded to use his method to record humpback migration patterns and behaviors, and he became one of the first researchers to document extensively a humpback feeding method called "bubble-net feeding," in which a whale traps tiny crustaceans or fish with bursts of blown bubbles. He and others also sounded an alarm early on that increased boating traffic in Glacier Bay by the late 1970s might be causing whales to leave, a theory not popular with the growing whale-watching industry.

"I told them you can't invite people in without educating them first," says Jurasz, who admits the theory remains controversial. "Some people accused me—can you believe this?—of being against whale watching."

Jurasz's greatest contributions may lie in education. In 1970, he moved his wife Ginny and two small children, Peter and Susan, aboard a 50-foot wooden boat called *Ginjur*, and for more than two decades the family hosted some 1,300 high school, college and graduate students who—along with noted biologists such as Sylvia Earle—assisted in the field work of his Sea Search program.

"It's great to watch young people learn about these creatures," enthuses Jurasz. "Heck, the most complete record of whale breathing rates was done by my daughter Susan from the time she was eight until she turned 20. She held the stopwatch. I told her she had a whole Ph.D. project right there."

Field editor Paul Kvinta is based in Austin, Texas.



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DIVE MEDICINE

DEAR DR. SCUBA

BY SAMUEL SHELANSKI, M.D.

I am an M.D. who has asthma and who wants to dive. Do you think there is value for an asthmatic in ascending in "steps"—that is, stopping for a full inspiration and expiration before ascending to the next step? Also, since exercise-induced bronchospasm is provoked by cooling and drying of the airways, should asthmatics use the type of regulator that warms the air by use of "radiator fins," which bring the air temp up closer to water temp, normally used for ice diving? Is there any type of device that both warms and humidifies the air you breathe from a tank?

ELAINE TURNER, M.D. / RICHMOND, VA.

to minimize the risk of AGE.

There may be some benefit in using one of the regulators that is supposed to humidify the air that you breathe. A substantial amount of heat is lost by the lungs in humidifying the dry air that is inhaled during diving. By reducing the amount of humidification necessary, the airways would not be cooled to as great an extent, theoretically reducing the risk of triggering an attack in an asthmatic with cold-induced asthma. However, no asthmatic should dive with asthma so poorly controlled that this potential benefit would make any significant difference in the risks of having an asthma attack while diving.



Ascending in steps could reduce the risk of arterial gas embolism in all divers, not just asthmatics.

I'm not sure whether or not there is a benefit in ascending in "steps." Your theory is logical: by exhaling fully before ascending, you decrease your lung volume, thereby reducing the risk of overexpansion injury. However, the argument could be made that if air-trapping occurs behind an obstruction, this air would not be exhaled. In this case, ascending in steps would provide no protection against pulmonary barotrauma.

In practice, probably the greatest benefit of this method would be in making you acutely aware of your rate of ascent. Recent research shows that 80 percent to 90 percent of all arterial gas embolisms (AGE) are thought to result from overly rapid ascents related to panic, out-of-air situations and uncontrolled buoyancy. Ascending in steps could significantly reduce the risk of AGE in *all* divers, not just asthmatics. This does not mean that all divers should now ascend in this manner, but all divers should ascend at 30 feet per minute or less

I am a 35-year-old male who has been diving for two years. I have a terrible time equalizing the pressure in my ears upon descent. The first 30 feet is the most difficult. I have seen

several physicians who have prescribed medications such as Entes, Seldane-D and Vancenase, all to no avail. Physicians have examined me the day after a dive, and find inflammation but no damage to the eardrum. Do you have any advice short of hanging up my fins?

JOSEPH PRZYTULA, JR. / RAHWAY, N.J.

A

You shouldn't need to hang up your fins.

You say that you've seen several physicians for this problem and that they have prescribed several different medications. These

are all appropriate measures to try, assuming that there is no anatomical abnormality that makes clearing your ears more difficult. Since these medications have not worked, we need to look at other ways to deal with your problem.

Many people who learn to dive are taught to clear their ears using the Valsalva maneuver, tensing the abdominal muscles, forcing air into the Eustachian tube and inner ear. While this is an easy and usually effective way to clear one's ears, it does not work for everyone. Other methods include swallowing and pressing the back of your tongue against the roof of the mouth while holding your nose. Whichever method you use, I suggest that you try one of the others to see if it works.

You also say that physicians have found inflammation of your eardrum after a dive. This can frequently occur when the drum is subjected to unequal pressures, and indicates that you are either rushing to descend without adequate equalization, or that you are being overly forceful in pushing air into your inner ear. In either case, make sure that you are clearing your ears, gen-

tly, from the surface, before you even start to descend, and clear with every breath. If you have to force air in, then try ascending a little bit and clear again. The Eustachian tube will seal if there is a pressure gradient, and it may be that your ears are particularly sensitive to this gradient, requiring more than normal care to equalize.



Is it safe to dive after having a photorefractive keratectomy (PRK)? It is claimed that it uses lasers but no heat is generated

and no tissue is burned. Wouldn't there be an air space in the cornea after the PRK?

TOTOY ONG / MARIKINA, PHILIPPINES



I consulted with an opthalmologist concerning your question. She informs me that an air space does not

result in the cornea as a result of photorefractive keratectomy, and that once the surgeon has determined that the eye has healed, there should be absolutely no contraindication to diving. I would like to use your question as an opportunity to address the issue of diving after surgery in general.

While diving subjects the body to

mentally a low-impact sport physically. The body is not subjected to many bumps and bangs. As such, diving is possible after many, if not most, surgeries. Whether or not a person can dive after a particular surgery depends, of course, upon the type of surgery, and upon the individual patient, but some general statements can be made.

The most important of these is that the person must allow a suitable amount of time to heal and recover from the surgery before starting to dive. The determination of when a person is sufficiently healed to resume regular activities should be a combined decision of the patient and the surgeon.

While you may be able to resume diving, it may require some changes from your previous diving patterns. For example, a person who has had lower back surgery may be advised to avoid surf entries where it may be necessary to carry the weight of a tank for some distance.

If you're told not to dive, don't be afraid to get a second opinion. Many physicians who are not familiar with diving medicine will, quite correctly, tell

various physiological stresses, it is fundatheir patients that they cannot dive after a particular procedure. When confronted with an unknown, physicians can only advise their patients to take the safest possible route. If I had not consulted an opthalmologist, I would have had to advise you not to dive after PRK. On occasion this may result in a person being incorrectly told not to pursue a particular activity. If you suspect that this may be the case, consult an expert. Divers Alert Network (DAN) maintains a list of physicians who are interested in treating divers, and may be more capable of assessing whether or not a person can dive after recovering from surgery. This does not mean that you should go from doctor to doctor until you find one who says you can dive. If an experienced and knowledgeable physician tells you that you would be at substantially increased risk of injury from diving as a result of any medical condition, you would be foolish to dive.

> Questions for Dr. Shelanski should be addressed to RSD, Dive Medicine, 6600 Abercorn St., Suite 208, Savannah, GA 31405; or you can e-mail us at RSDmgzn@aol.com.

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Alan Kay Bethesda, MD Other dive magazines float so many puff pieces, it feels like they're blowing bubbles for resorts and operators. Rodale's Scuba Diving is colorful, clear, enthusiastic, but shills for no one. Advertising is clearly marked. The destination guides are so good I tear them out and use them like Yellow Pages!

R.C. Williams, Jr. Marblehead, MA

The answer is simple — you tell it like it is!
Whether you are reporting on dive resorts, operators, equipment tests, etc. you don't pull any punches. And you speak from experience. You writers have been there, seen it, done it — and that means alot!

John Maclary Palmyra, PA

The response to our Magazine Divers Trust Contest was overwhelming. We received hundreds and hundreds of letters explaining how we've earned your trust. These three won a special place in our hearts along with a great prize-a Dacore Extreme BC,

Sherwood Encore computer, or a Scubapro MK10/G250 Regulator.

LIVE-ABOARD PROFILE

Peter Hughes' Sea Dancer

PASSPORT TO THE BEST DIVING

IN THE TURKS AND CAICOS

Text by Rob Curran

n all Peter Hughes boats, the genius is in the dive itinerary. The Hughes philosophy is "a live-aboard is only as good as the diving it gets you to." The bottom line is superior diving. And Sea Dancer delivers.

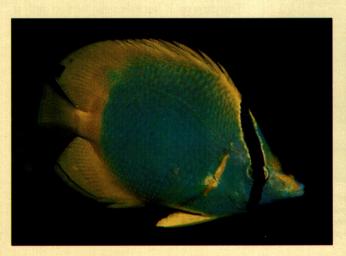
Most of the year, Sea Dancer operates out of Providenciales (Provo) in the Turks and Caicos. These islands serve up some of the best wall diving in the Caribbean. Visibility averages more than 100 feet. The drop-offs are spectacular; the reefs, pristine. Colorful sponges, corals and reef fish abound. It's common to spot cruising eagle rays, sharks and other large pelagics. Divers explore the lush reefs and walls around Provo and Grand Turk as well as areas beyond the reach of land-based operators like French Cay and West Caicos. During the summer, the Sea Dancer cruises the neighboring southern Bahamas. Bahamas itineraries include the more familiar—Eleuthera, the Exumas and San Salvador—and remote areas that rarely host divers: Little Inagua, Hogsty Reef, Castle Rock, Crooked and Conception Islands, and Mayaguana.

Sea Dancer is a model live-aboard dive vessel. The Peter Hughes touch is apparent, from the gleaming blue and white signature paint, to the attention to detail, comfort and amenities. On the huge sundeck, hammocks beckon passengers for serious après-dive relaxation. The entertainment center features a large-screen TV, tape deck and CD players for whiling away leisure hours.

TAKE THE PLUNGE

More than half of *Sea Dancer's* main deck is dedicated to diving. The dive deck features custom tank racks and benches with storage space underneath, large photo tables, drying racks for wetsuits, and battery charging stations.

On Sea Dancer the dive bell usually rings four or five times a day. Making a dive couldn't be easier: gear up at your station and walk down to the dive platform.





Aboard the Sea Dancer, you won't have to sacrifice comfort to explore hard-to-reach areas like French Cay in the Turks and Caicos and Little Inagua in the Bahamas.

The crew hands you your fins. Giant stride into the blue. After your dive, ascend to 15 feet, where the rigid decompression bar welcomes you for an easy safety stop. A crew member helps you aboard and slips off your tank and BC. It's that easy.

GET THAT SHOT!

Sea Dancer is an underwater photographer's dream. The boat features state-of-theart photo and video equipment and daily E-6 processing. After a day's shooting, guests gather in the dining salon to enjoy the slides and video on high-resolution monitors, 8mm and VHS tape decks and equipment for dual-projector slide shows.

STATELY STATEROOMS

Aboard the Sea Dancer, roomy air-conditioned staterooms are a comfortable home-away-from-home. Each cabin has a sink, hanging rack, storage bin, mirror, basket of toiletries, private or semi-private bath, and luxurious royal-blue bathrobes, perfect for casual lounging or a quick warm-up after a dive.

CULINARY DELIGHTS

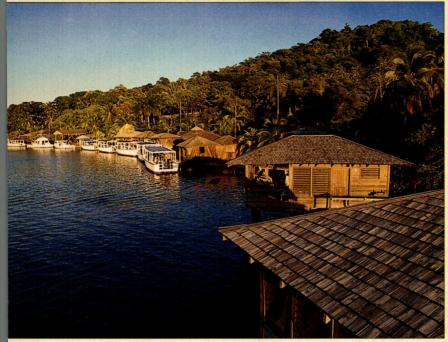
Sea Dancer's skilled chef serves a renowned menu of sumptuous American and island cuisines. Everything is delicious, from homemade soups to mouthwatering desserts. Hot breakfasts are prepared to order. Lunches are served buffet-style. Dinner includes a choice of two entrées served at your table by the steward.

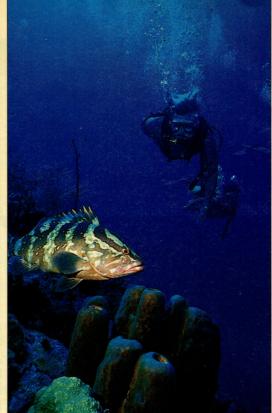
BOOK IT For reservations and information, contact Peter Hughes Diving, your dive travel specialist or travel agent. Phone (800) 9-DANCER (932-6237) or (305) 669-9391.



The underwater photographer can capture photos like these and view them the same evening, thanks to daily E-6 processing aboard the Sea Dancer.

RESORT PROFILE





Anthony's Key Resort

LOSE YOURSELF ON ROATAN

Text and Photography by Greg Johnston

efore reading any further, please keep this in mind: Anthony's Key Resort is the kind of place you could lose your head over. In fact, after one visit you may be tempted to send for your belongings and never go home. Anthony's Key Resort on the island of Roatan in the Bay Islands of Honduras is just that special.

BACK TO BASICS

Anthony's Key Resort is the visionary concept of owner Julio Galindo, who has perhaps designed the quintessential dive resort. For more than 25 years, Anthony's Key has been a state of mind, where shoes are considered a nuisance, clocks and radios don't exist, and guests live in little wooden huts.

There are 56 natural wood bungalows built over a private island, some stilt-suspended at the sea's edge, others staggered up a jungle hillside. Each guest room is a single cottage with double or king-sized beds, a hot freshwater shower, ceiling fans, large louvered windows and a private balcony. A small dory shuttles guests back and forth from the islet to the main island all hours of the day and night.

The hilltop is where you'll find the main reception area as



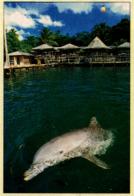
Clockwise from top left: Anthony's Key Resort's eight custom dive boats depart the idyllic resort for three scheduled boat dives every day. More than 40 established dive sites are accessible from Anthony's Key, many of which lie within the Bay Islands' first underwater reserve. Many of the resort's guest bungalows are on a tiny private island.

well as the open-air restaurant and bar. Local bands play regularly and sunsets are particularly spectacular from here.

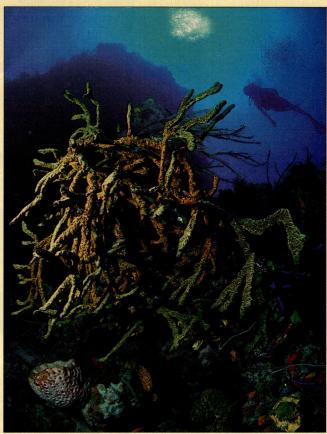
When you're not 50 feet under water, there are plenty of other activities to keep you busy. Besides diving, there's windsurfing, fishing, beach picnics, sunbathing, kayaking and horseback riding. Guests can explore the local flora and fauna on a nature trail that leads up the mountainside. Special ecotours to the ancient Mayan ruins at Copan can also be arranged. But Anthony's Key's most prized gift to its visitors is one that no other resort in the world offers—the Institute for Marine Sciences.

THE INSTITUTE FOR MARINE SCIENCES

The Institute for Marine Sciences is a complex of classrooms, laboratories and lecture rooms that often host visiting university students from the United States and other countries to study marine biology. But for divers, the institute is best known for the two dolphin interaction programs available to quests of Anthony's Key Resort.



Guests of Anthony's Key have the opportunity to participate in the Institute for Marine Sciences' two dolphin interaction programs.



Some of the Bay Islands' best wall diving is a quick boat ride from Anthony's Key.

The Dolphin Snorkel Program provides snorkelers the opportunity to get into the water with dolphins in an enclosed area of the natural lagoon.

The Dolphin Dive Program is an opportunity for divers to observe and interact with dolphins freely in their natural environment. In 50 feet of water on a sand bottom, divers watch the dolphins come and go naturally, unprompted by trainers. The Dolphin Dive Program is one of only a few in the world today, and with its emphasis on natural behavior, it's one of the best.

THE DIVING

Anthony's Key Resort and the Institute for Marine Sciences lie within the Sandy Bay/West End Marine Park, the first underwater reserve in the Bay Islands. More than 40 established dive sites are accessible from the resort.

The eight 40-foot custom dive boats carry only 12 to 15 divers each, maximizing comfort. There are three scheduled boat dives every day and usually two night dives offered each week. Shore diving is available in the lagoon day and night. Because of the resort's location near the western tip of the island, the dive boats often visit sites on both sides of the island.

The Anthony's Key Resort dive facility is a full NAUI and PADI training center emphasizing specialty programs and scuba courses. The excellent support center includes a huge staging dock with guest equipment room, wet storage area, a gift and snack shop and decompression chamber. The dive facility also features sign-up boards, a large freshwater rinse, and Photo Roatan, a full-service photo/video lab with E-6 processing and camera and video rentals.

BOOK IT ➤ For a complete AKR/IMS package, contact Bahia Tours, 6840 S.W. 40th St. #208, Miami, FL 33155-3748. Call (800) 227-3483 or (305) 666-1997 and fax (305) 666-2292.

ADVERTISEMENT

RESORT PROFILE

Small Hope Bay Lodge

UNPARALLELED DIVING ON

INTRIGUING ANDROS ISLAND

Text by Rob Curran

est of Nassau is the Bahamas' largest and most intriguing island:
Andros—a vast, untouched playground for divers. Just offshore are
shallow and deep reefs, breathtaking underwater walls undercut with
caverns, exhilarating drop-offs and an impressive collection of blue holes.

In 1960, the Birch family opened Small Hope Bay Lodge as the first dedicated dive resort in the Bahamas. Twenty beachfront cottages offer island comfort, private baths and king-size beds. Resort amenities include dining room, cocktail bar, game room, boutique and hot tub. The atmosphere is simple: laid-back, down home and downright friendly.

The staff includes four instructors and three divernasters. Three boats are dedicated to diving. The two-tank morning boat leaves at 9:30; the one-tank boat at 2 p.m. In the summer, all-day trips include two tanks, snorkeling and lunch on a beautiful beach.

Guests while away leisure topside hours with sailboards, a sailboat, bicycle



Diving, guests come face to face with monster lobsters while fisherman cast for bonefish and bigger game.

tours and nature walks. Small Hope Bay Lodge offers a variety of world-dass options for anglers: stalking bonefish in Andros' maze of flats, spincasting for grouper, and deep-sea fishing for the really big game.

BOOK IT ➤ Small Hope Bay Lodge is an all-inclusive dive resort. Dive packages include accommodations, meals, bar drinks and three dives a day. Winter rates range from S840 for a four-night stay to \$1,470 for seven nights. Fly to Andros from Fort Lauderdale on the resort's Aero Commander for \$200 round-trip. Phone (800) 223-6961 or (809) 368-2013.

DIVE OPERATOR PROFILE

Hawaii 4 Divers

DIVE IN WITH

THESE ISLAND OPERATORS

Text by Greg Johnston

he Hawaiian Islands' topside tapestry is a nature that is palpable: green flashes, night rainbows, snow-tipped Mauna Kea, fiery volcanoes and delicate orchids. Under water, Hawaii is filled with intrigue and mystery: frolicking humpback whales, swim-through lava tubes, Molokini Crater, sunken shipwrecks and the green sea turtles.

THE BIG ISLAND OF HAWAII - SEA PARADISE

Located in the coastal city of Kona on the Big Island of Hawaii, Sea Paradise is a one-stop dive operation. "Our specialty is small diver charters," says owner Jonathan Conrey. "Our 31-foot custom dive boat is limited to 12 divers, giving our customers the personal attention they deserve on vacation."

You can rely on the experienced and knowledgeable dive guides of Sea Paradise, who know the waters around Kona intimately and can locate and identify the many critters you'll encounter. You'll dive hassle-free, as the staff sets up your equipment, changes tanks, and rinses and stores your equipment—giving you more time to enjoy the sights on Kona.

On the Sea Paradise itinerary are several exciting dives each week, including a thrilling, must-do dive with manta rays —rated one of the top three in the world by *Rodale's Scuba Diving*.

MAUI - HAWAIIAN REEF DIVERS

On the old whaling island of Maui, you'll find Hawaiian Reef Divers. It's a 15-year-old family business, perfect for handling small dive groups or larger groups with advance notice.

Hawaiian Reef Divers is a full-service PADI dive center located in the heart of historic Lahaina, specializing in introductory resort through full certification courses, including advanced open-water, rescue, divemaster and instructor training. "We have boat dives as well as some of the best beach diving in Hawaii," says operations manager Kahren Bellamy. "Our custom boats dive along Maui's west coast, the island of Lanai, Molokini Crater and often we go to Molokai."

Winter months always bring a visit from the humpback whales. Whale watching expeditions often afford the opportunity to hear their songs under water. The summer months are highlighted by sightings of dolphins and the occasional whale shark. Boat dives are scheduled daily; night diving is by request.

KAUAI - DIVE KAUAI

Farthest and most western of the Hawaiian Islands is Kauai. Separated by the deep Kauai Channel, it's an area where large ocean pelagics are often sighted. Dive Kauai Scuba Center is located here—your ticket to exciting dive adventures.

Dive Kauai is the first 5-star PADI Instructor Development Center and the









A sampling of the Hawaii 4 Diver's fleet: from top left, clockwise, the boats of Ocean Concepts, Sea Paradise, Hawaiian Reef Divers, and Dive Kauai.

only operation which teaches resort courses through open-water instructor programs and 13 different PADI specialties. Dive Kauai is also the only dive facility with a custom 28-foot Delta dive boat with easy swim-step ladders, freshwater shower and handicapped diver access. "By limiting the capacity to 12 divers," says president Michael Gough, "our instructors can show our guests some of the best of Hawaii."

The daily schedule includes two-tank morning and afternoon dives with shore diving available. Night dives are scheduled by request and computer diving is welcomed. At regularly visited sites such as Turtle Bluffs, Sheraton Caverns and Mona Crack you'll find green sea turtles, lobsters and lava tubes. Private tours of the offshore island of Niihau—only opened to outsiders in 1987—is a special treat as islanders maintain the traditions, culture and language of old Hawaii.

OAHU - OCEAN CONCEPTS

Conjure up images of Hawaii and, more often than not, they're located on Oahu: Pearl Harbor, Waikiki Beach, Honolulu and Sunset Beach. And the dive sites define Hawaii diving: wrecks, varied terrain and endemic marine life."To sum up diving on Oahu," says Ocean Concepts chief operating officer Jim Byrem: "It's like no other place."

Ocean Concepts is a full-service PADI 5-star Instructor Development Center offering beginner through instructor courses and several specialties with 4 locations to serve you. Daily two-tank morning and afternoon dives are regularly scheduled, including night and snorkel dives. There is plenty of unlimited shore diving around Oahu and it's included in your dive package.

Several shipwrecks are a highlight of diving Oahu. Wrecks like the Mahi and the YO-257 are part of the daily schedule that includes dives along the western and southern shores. During the summer months, trips to the north shore—including Shark's Cove—are easily dived from Ocean Concepts comfortable, 36-foot, 24-passenger custom boat and the smaller, 23-foot, six-passenger dive boat.

BOOK IT ➤ Hawaii 4 Divers offers an exciting program both above and below the water of all six islands for you to experience Hawaii as it should be. For information call (800) GO-HAWAII or Ocean Concepts, (800) 808-DIVE, Hawaiian Reef Divers, (800) 551-6767, Sea Paradise, (800) 322-KONA, and Dive Kauai, (800) 828-DIVE.

DIVE OPERATOR PROFILE

Dive Dive Dive

FUN, FUN, FUN IN THE

HEART OF THE BAHAMAS

Text and Photography by Greg Johnston

ive Dive Dive may sound like orders from a submarine commander, but at this resort on New Providence Island, it means fun, fun, fun! For more than a decade, divers have been coming to Dive Dive Dive for the friendly atmosphere and great diving at sites like the James Bond Wreck, Fishbowl, the Blue Hole and the magnificent 6,000-foot wall of the Tongue of the Ocean.

Dive Dive Dive is both intimate and convenient, combining out-island ambience with easy access to Nassau's famous restaurants and nightlife. Each of the furnished villas is air-conditioned and sleeps four people with private bedroom, dining and living areas. The villas are equipped with TV and VCR and a complete kitchen. You'll also enjoy your own private patio with barbeque grill and outdoor dining area. Daily shuttle service into Nassau and Cable Beach is easily arranged for an afternoon or evening of shopping, sightseeing and casinos.

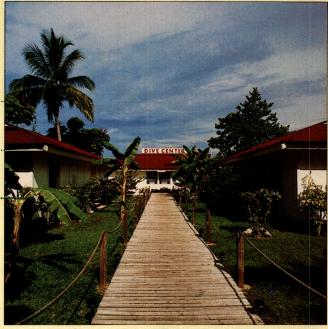
SERVICE, SERVICE, SERVICE

Just roll out of bed in the morning and take a few steps to reach the dive center. Here you'll find a complimentary continental breakfast served on the large veranda. The dive center is open daily and offers top-of-the-line rental equipment, cold drinks and snacks and an assortment of T-shirts, books and other items. An equipment storage room and rinse tank are available for quest use.



villas are equipped with TV and VCR and a complete kitchen (left). Twiceweekly dives with Caribbean reef and bull sharks are a specialty at Dive Dive Dive (below).





The full-service dive center at Dive Dive Dive is just steps from the resort's deluxe villas.

Dive Dive Dive is a an ANDI, IANTD, NASDS, NAUI, PADI, SSI & TDI Facility. A full range of specialty courses and resort and full certifications are available to further your diving skills.

Daily dive trips consist of two-tank dives in the morning and afternoon with night dives by special request. Typically you'll make a deep dive on or near the wall and then a second dive often on a shallow reef or wreck.

Three custom dive boats, the Sea Wind, Sea Dancer and Nitrox Diver, transport divers to sites along the wall no more than 20 minutes away. Each boat is large and comfortable with easy-access entry and exit ladders and dry areas for cameras and personal items.

SHARKS AND NITROX

A highlight of any visit to Dive Dive Dive is an encounter with sharks. Shark dives take place Wednesday and Saturday mornings near Shark Wall, where the surrounding reef forms an amphitheater on the sandy seafloor. Caribbean reef and bull sharks swim within inches of your mask while experienced shark handlers feed them.

Another specialty is the nitrox certification course. Dive Dive was the first Caribbean dive operation to offer nitrox and nitrox certification for open-water divers. As part of your dive package, you can try a nitrox introductory course consisting of classroom training and one nitrox dive.

You don't have to stay at the resort to enjoy all that is offered. Some diving guests stay on Cable Beach or Paradise Island, hopping on one of Dive Dive

Dive's shuttle buses to get to and from the resort. Just call for arrangements and the bus will be waiting for you at your hotel.

BOOK IT ► For more information on diving the best of the Bahamas, contact Dive Dive Dive toll free at (800) 368-3483 or fax (305) 786-8941. In Nassau, call (809) 362-1143 or (809) 362-1401.



DESTINATION PROFILE

One Earth Tours

THE EAST AFRICA COLLECTION

he unmatched beauty found in the ever-changing horizons of Kenya and Tanzania are painted by a diverse landscape of valleys, lakes, rivers, plateaus, savannas, deserts, beaches, islands, ocean and coral reefs. One Earth Tours, along with Tropical Adventures Travel, offers the adventurous dive traveler a wide selection of the best

of Kenya and Tanzania, both above and below the water.

Every person on earth should experience a magnificent wildlife safari expedition—to places like the Masai Mara, Samburu, Ngorongoro Crater, Lake Manyara or the Serengeti Plains—followed by a

A real-life Lion King: Kenya's Masai Mara Game Reserve is famed for its lions and is on the itinerary offered by One Earth Tours and Tropical Adventures Travel.



Cruise the Indian Ocean waters off Kenya and Tanzania aboard the luxurious Poseidon Quest.

one-week diving expedition to the pristine waters of the Indian Ocean on the renowned 93-foot live-aboard *Poseidon Quest*, or from the superb Manta Reef Camp situated on remote Pemba Island, just north of Zanzibar. These trips rank among the world's greatest topside and underwater adventures. The astonishing memories are something you will cherish a lifetime.

A six-day trip on the *Poseidon Quest* costs \$1,495; a six-day stay at the Manta Reef Camp is only \$700 per person. Complete 17-day itineraries begin at \$4,200, including airfare from the U.S., wildlife safari, dive program, meals, transfers and taxes.

BOOK IT ► For detailed information and brochures, call (800) 247-3483, (206) 441-3483, fax (206) 441-5431. Tropical Adventures Travel, 111 Second North, Seattle, WA 98109.

RESORT/ LIVE-ABOARD PROFILE

Matagi Island and *Matagi Princess II*

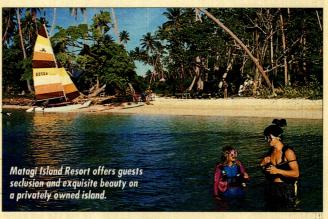
A TOUGH COMBINATION TO BEAT!

sked to choose a dream destination, travelers often name the magical Fiji Islands. Divers can have their dreams fulfilled at Matagi Island Resort and on the superb live-aboard *Matagi Princess II*.

Far removed from commercialism, Matagi Resort is a lush, tropical 240-acre



A diver's dream: To be pampered aboard the spacious Matagi Princess II as it plies the sparkling waters of the Fiji Islands.



jewel. Private cottages house only 22 guests. Accommodations are spacious and will satisfy the most discriminating traveler. Discover luxurious beauty in Matagi's nature—the island's lagoons, beaches and jungles await exploration. The diving in this region has been written about in dive publications all over the world.

Combine all this with a live-aboard adventure aboard the 85-foot luxury vessel Matagi Princess II and you'll go home with memories not easily forgotten. Six beautiful cabins, all with full private baths, accommodate a maximum of 12 guests. Trips run from four to seven nights and focus upon the world-renowned Somosomo Straits and the seldom-visited Ringold Island group.

Only in the Fiji Islands can you experience such an unbelievable quality of comfort and service graciously provided by the world's most friendly, culturally interesting and warmhearted people.

BOOK IT ➤ For detailed information and brochures, call (800) 247-3483, (206) 441-3483, fax (206) 441-5431. Write to Tropical Adventures Travel at 111 Second North, Seattle, WA 98109.

DIVE OPERATOR PROFILE

Dive Provo

ENDLESS SUMMER IN

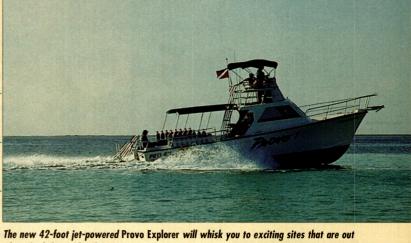
THE TURKS AND CAICOS

Text by Rob Curran

re winter chills sending shivers down your spine? Why shake when you can bake—and dive—in the warm Turks and Caicos Islands? At Dive Provo, hot summer rates have been extended through Dec. 21.

Dive Provo is a PADI 5-Star facility located at the Turquoise Reef Resort and Casino in Providenciales. Each morning and afternoon—while some unfortunates are cursing biting winds, snow and sleet—fast boats from the Dive Provo fleet head right from the resort to the island's famed walls and reefs. A new 42-foot jet boat, the Provo Explorer, whisks divers to exciting sites that are out of range of less speedy craft.

After diving, return to the comfort, convenience and white-sand beach of Turquoise Reef Resort. You have poolside options: You can toast your dive buddy with a Rum Runner while you muse on how long it's going to take the folks back home to dig the car out of the snow. Or you can go through your REEF ID photo guide—check off the species of warm-water creatures that you've encountered so far on your dive vacation. Another reason to gloat: the REEF ID pack-



of reach of slower dive boats.



Red row pore and stove pipe sponge are Turks and Caicos' underwater trademarks (top). Everything divers could need or want is under one roof at the Turquoise Reef Resort.

age—course, book, materials and membership in the Reef Environmental Educational Foundation—are included at no extra charge when you prebook a minimum stay of three nights.

Dive Provo is a modern, full-service scuba and watersports center with a friendly and professional staff. The menu of services includes two-tank morning trips, one-tank afternoon dives, three-tank Scuba Safaris, night dives and snorkeling excursions. The four fast boats boast lots of elbow room. spots for sun and shade, broad dive platforms and safety-stop bars equipped with air supplies. The dive center offers the complete range of PADI instruction, from Intro Scuba and open-water certification, to check-outs, advanced training and specialty courses, plus NAUI and SSI referrals. Camera enthusiasts appreciate the Underwater Photo and Video Center and E-6 film processing service.

At Turquoise Reef Resort, everything divers need is under one roof. The resort is home to Dive Provo, plus the only casino on the island, a lounge with nightly entertainment, a cafe for breakfast buffets and open-air dining, poolside snack bar, the Portofino Restaurant, lighted tennis courts and exercise room. The comfortable, modern rooms are airconditioned; all feature balcony or patio, 24-channel cable TV, private bath and phone.

BOOK IT Don't just stand there shivering, book it! Through Dec. 21, packages start at \$339 per person, double occupancy for a four-day, threenight package. Included are two two-tank morning trips, one bonus afternoon or night dive, REEF course, hotel taxes, gratuities and transfers. Special rates are available for New York departures, which start at \$649 per person, double occupancy, and include round-trip airfare from JFK to Provo, four days, three nights accommodations, two days of twotank diving, one bonus night or afternoon dive and transfers. Call the U.S. reservations office at (800) 234-7768 for other packages or more information.



RESORT PROFILE

Kelly's On The Bay and Aqua-nut Divers

THE BEST OF TOPSIDE

AND UNDERWATER KEY LARGO

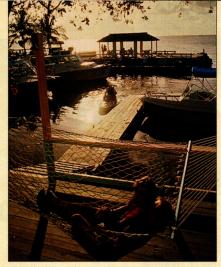
Text by Rob Curran



f you're looking for an Island In The Sun, stop at mile marker 104 in the Florida Keys. Kelly's—a family-operated resort—is nestled among the palm trees on the banks of Florida Bay. Owner and family patriarch Richard Thaler confides, "We take stressed-out people and send 'em home with smiles."

Kelly's On The Bay is a spotless 26room, all-inclusive dedicated dive resort. One size rarely fits all, so Kelly's offers a range of accommodations from rooms to efficiencies. All feature air-conditioning, TV with HBO and phone. The Thaler family enjoys sharing "their" Florida Key. The attitude is "we-aim-to-please—just-ask," whether it's diving, recommending nearby restaurants, fishing, exploring the Everglades or poking around Florida from Miami to Key West. The approach works: the number of repeat guests is consistently growing.

Besides the welcome and atmosphere, it's the convenient, excellent



Experience underwater and topside Key Largo hasslefree at Aqua-nuts and Kelly's On The Bay.

diving that keeps people coming back. Kelly's is home to Aqua-nuts, a modern, full-service scuba operation. After a hearty breakfast beneath the thatched roof of the Tiki hut, step right onto one of the two roomy boats for a trip to Pennekamp Coral Reef State Park. The short trip to the reef will include a mini eco-tour through the Florida mangroves. The boat crews are happy to answer any and all questions about the area. Explore the famed wrecks *Bibb*, *Duane* and *Benwood*, and vibrant Molasses and French Reefs. Options include two-tank dives at 8:30 a.m. and 1 p.m. and night dives. Aqua-nuts training center offers a complete range of instruction: resort courses, certifications, referrals, specialties and Nitrox.

BOOK IT ➤ One popular package in the Fall, good through December 15th, is a two-night, two 2-tank dive special for only \$150 pp/dbl. Breakfast, tanks, and

RESORT PROFILE

Bayman Bay Club

A TREASURE ON GUANAJA,

CROWN JEWEL OF THE BAY ISLANDS

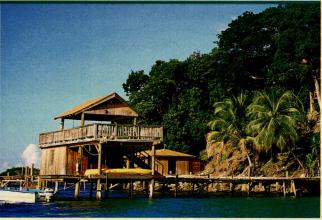
Text by Rob Curran

ayman Bay Club is located on Guanaja, tallest and second-largest in the Bay Islands chain of Honduras. This is island wilderness. Unmarred by cars or roads, the hilly island is as unspoiled as it is picturesque. Mountain peaks jut from the green jungle. Guanaja is surrounded by clear, warm Caribbean waters. Just offshore are mammoth corals, fringing reefs and impressive undersea walls—part of the second-longest barrier reef in the world.

Bayman Bay Club nestles in lush tropical surroundings above a small sandy bay. The three-level clubhouse is the resort's striking centerpiece. The main level features the dining room, bar and sunset veranda. Upstairs are the library, lounge and game room. One flight up is the observation deck with the best siesta hammock in the islands.

Meandering paths connect the clubhouse and 17 cottages that dot the hillside property. Each cottage has a spacious bedroom, private bath and porch with ocean view. Cooled by ceiling fans and shaded by tropical trees, the cottages are comfortable year-round.

Bayman Bay Club offers exceptional snorkeling, shore diving and more



Spectacular drop-offs and walls are only a short boat ride from Bayman Bay Club's dock.

than 30 dazzling sites only minutes away by boat. The thriving coral reefs are protected in the national underwater park. Options include walls, canyons, wrecks, grottoes, caverns and tunnels.

Time is one of Bayman Bay's most alluring qualities: time to dive, to explore mountain trails, and to sit and enjoy the setting sun. Well off-the-beaten tourist track, Bayman Bay Club is a small, friendly club for those interested in the ultimate getaway vacation.

BOOK IT ➤ Through 12/15/95, a seven-night package with accommodations, meals, two dives a day and more is \$725 pp/do. From 12/23/95 to 4/26/96 and U.S. holiday weeks throughout 1996, the package is \$899; 4/27/96 to 12/20/96, \$749. Phone Bayman Bay Club at (800) 524-1823 or (305) 572-1902.

CAREER SCHOOL PROFILE

NAUI Career Institute

PROFESSIONAL TRAINING

FOR PROFESSIONAL JOBS

Text by Rob Curran

ob Brayman, executive director of the NAUI Career Institute, is emphatic: "There are important differences in professional training. We are a vocational institution. Everything you need for success is designed into our exclusive curriculums: diving experience, instruction and tests. We prepare you. When you graduate, we certify you—you are not a 'candidate' for an exam. The day you graduate is the day you are certified ready to work."

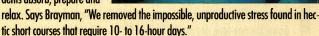
The NAUI Career Institute is located next to Faro Blanco Marine Resort in the Florida Keys town of Marathon. The facility houses classrooms, offices and Hall's Diving Center. Next door are an Olympic-size pool, 40-foot custom dive charter boat, two restaurants and student accommodations. The location affords easy access to warm, clear waters for training dives.

Graduates are certified as NAUI Gold Instructors. All courses feature apprenticeships, which, says Brayman, "means real work in actual resort conditions. You teach Halls' students how to dive. You are the divemaster on reef charters. You sell and counsel customers on equipment purchases, instruction and dive



travel. You fix customers' regulators. You have actual experience to put on your resumé."

Courses feature eight-hour days. Days off are scheduled to help students absorb, prepare and



From 1992 to 1994, the Institute scored 100 percent graduate placement in six of eight types of instructor courses and 97 percent placement in all Institute programs. Various tuition options are available, including 100 percent financing, veterans education benefits and government grants. For a detailed information kit, phone (800) 331-4255 or (305) 743-5929.



LIVE-ABOARD PROFILE

Out Island Voyages

M/V BALLYMENA:

BEYOND THE EVERYDAY

Text by Greg Johnston

hat makes the M/V Ballymena, the newest live-aboard dive yacht, so unique? It's the five star luxury of the Ballymena and the diving destinations, pure and simple.

Nassau is just the beginning of a week-long adventure which includes the best of The Bahamas. Itineraries include remote areas of the Exumas, Andros or the untouched Southern Bahamas. On trips you will dive into mysterious blue holes, around vibrant coral pinnacles and down ocean drop-offs.

The *Ballymena* is the 124-foot flagship of Out Island Voyages. Nothing has been overlooked in this luxurious dive yacht. A no-compromise mix of creature comforts and delectable dining fare is the trademark of the *Ballymena*. You'll find 10 exquisitely appointed air-conditioned staterooms with en-suite bath, an elegant main salon providing plenty of space with areas of relaxation and an extensive print, music and video library, wet bar, large-screen color TV and VCR. The salon also doubles as an audiovisual center with slide projector and screen for viewing, perfect for meetings, lectures and training sessions.





See the best of the Bahamas and enjoy the best of live-aboard luxury aboard the Ballymena.

The Ballymena is outfitted with state-of-the-art dive equipment, including a fast-fill air compressor, easy-exit dive platforms and two excursion boats. Underwater photographers will love the on-board E-6 film processing facility and videographers can view and edit tapes in the audiovisual center.

For nondivers, the *Ballymena* offers a host of topside activities, including game fishing, snorkeling, sailing, ocean kayaking and shore excursions.

For more information, contact Out Island Voyages at (800) 241-4591 or in Nassau, call (809) 394-0951; fax (809) 394-0948.

RESORT PROFILE

Mt. Pleasant Guest House and Porpoise Divers

OFF-THE-BEATEN TRACK

IN THE TURKS & CAICOS

Text by Susanne Cummings

he tiny island of Salt Cay is one of the Turks and Caicos' most unusual treasures. The population barely tops 150. Only a handful of pickup trucks crowd the one-lane dirt roads. Freshly whitewashed old stone houses are brightened by vibrantly colored fences, shutters and bougainvillea in full bloom. The local friendliness is genuine.

For visitors and photographers seeking a haven off-the-beaten track, virgin diving and the absence of boutiques and night clubs, Salt Cay's unpretentious, quiet, unspoiled atmosphere may just fit the bill. And with its warm, inviting atmosphere, Mt. Pleasant Guest House and Porpoise Divers capture the ambience of this sleepy little island perfectly.

Reminiscent of a Bermudan-style English country cottage with a bed and breakfast atmosphere, this charming 150-year old resort offers guests an intimate experience enhanced by the personal touch of owner Bryan Sheedy.

Newly refurbished, Mt. Pleasant Guest House hosts its guests in four bedrooms in the main house with additional guests and groups comfortably housed in the annex about 100 yards away. Accommodations are simply furnished with antiques and wicker. Ceiling fans circulate the refreshing ocean breezes. Antiques, western and cowboy memorabilia and first-edition publications decorate the house, reflecting Bryan's personal passions. A spacious open-air patio and gazebo bar located behind the main house provide an ideal locale for kicking back with your dive buddies, enjoying an exotic cocktail after diving or reading a book from Bryan's library.

At mealtime, the patio is transformed



The recently refurbished Mt. Pleasant Guest House offers a resort experience with a personal touch (left). Porpoise Divers limits groups on its two roomy dive boats to a maximum of 12 divers (above).



Divers come to Salt Cay for healthy reefs and superb walls.

into an alfresco restaurant featuring some of the best gourmet cuisine in the islands. Fresh seafood, conch, native specialties, lobster and N.Y. strip steak top the bill of fare and Bryan maintains a fully stocked wine cellar.

Local diving in Salt Cay is the real reason most guests make a pilgrimage here. Winter and early spring months mark whale-watching season and daily sighting of migrating humpbacks is common. Summer months bring mantas into the shallows. Visibility is almost always good and frequently superb, and the reefs and walls are remarkably healthy and clean. A variety of excellent sites including Salt Cay's newest dive site, Wandalust, begin at 30 to 50 feet at the top of the wall and lie very close to shore. Their pristine condition is due in part to the limited number of divers that explore them. Point Pleasant provides divers and snorkelers alike with one of the best shallow sites in the Caribbean.

Among the highlights of Porpoise Divers' weekly itinerary is a trip to the *H.M.S. Endymion*, an 18th-century British warship which sank in 1790 and whose huge, cannons and anchors remain intact in only 25 feet of water. Another is the weekly trip to Grand Turk where great diving is followed by lunch and a visit to the Museum.

Although Mt. Pleasant accommodates up to 20 guests, Porpoise Divers limits dive trips to a maximum of 12. The fleet includes *Porpoise II*, a fast 30-foot custom dive boat and *Porpoise I*, a roomy 38-foot "swim-aboard" styled after a World War II Navy landing craft. Porpoise Divers is a full-service dive operation. Scuba instruction, E-6 processing and a complete stock of rental equipment is available. A retail store

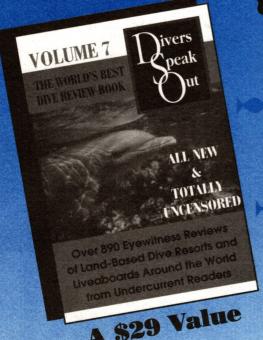
offers everything from tan-thru bikinis to books and postcards.

Dive packages at Mt. Pleasant Guest House and Porpoise Divers range from \$695 to \$895 per person, double occupancy for five to nine nights and include accommodations, meals, diving, tanks and weights.

BOOK IT ➤ For information and reservations, contact Mt. Pleasant Guest House toll-free at (800) 531-7996 or direct at (809) 946-6927.

DIVERS BEWARE!

Know the Truth — Before You Go



Undercurrent's all-new, 246-page

DIVERS SPEAK OUT!

895 Objective Reviews Of Resorts and Liveaboards in 92 Destinations

- Brutally Honest!
- 246 Fact-Filled Pages Absolutely No Advertising!
 - Totally Uncensored!

Palase "This place is next to a (real) dump!...No oxygen, no radio, no first-aid kit, and no head on the boat!" Page 179

Australia "This liveaboard takes you to new and undived sites almost every day — to be the first human to look at the reef was quite an awesome feeling!!" Page 5

Bonaire The truth about this dive operator in Bonaire — not what they say — "The boats were not equipped with oxygen and did not provide safety stop hangoffs, nor was there a surface downcurrent line deployed...No dive tables on the boat, no rinse tanks for cameras...is falsely advertised as newly refurbished!" Page 49

Dear Fellow Diver:

When it comes to dive travel, there's way too much hype and not enough hard facts.

Well, now you can find out for sure what's fact and what's fiction — it's all in the new totally uncensored, 7th edition of *Divers Speak*Out! — YOURS FREE with this special offer from *Undercurrent*, America's #1 scuba diving newsletter.

You won't get a collection of press releases or rave reviews. Instead, you'll get a fascinating look at the world of dive travel — 895 uncensored, eyewitness reports by divers who take their diving very, very seriously.

These hard-hitting reports reveal the intimate details of their own recent trips to dive destinations around the world. These divers have, of course, paid their own way, just as you do. So they have no reasons to pull any punches. They tell it like it is.

At last, you can get the hard dive travel information you need — before you spend your good money for a dive trip. And...

If you're looking for sharks — lots of them — and do not want to travel halfway around the world — check out this place..."Walker's Cay is shark rodeo...If you like sharks, this is the place!...Four or five kinds and over 100 in one place!" Page 11

Looking for a cheap liveaboard...shark diving, snorkeling with whale sharks, and unspoiled dive sites? Check out this one: "We had close-up whale shark encounters on 3 or 4 days of diving!...white tips, nurses, silver tips in abundance...wonderfully delicious food." Page 211

Not just diving — but also travel tips you need to know before you go. For instance, if you're headed to the British Virgin Islands, read this: "Avoid this Airline! They are undependable and discourteous. Take another airline, take the ferry from St. Thomas, or swim!" Page 222

Little-known places and exceptional diving experiences at very low prices

Only Divers Speak Out tells you where to see "South Pacific-quality pelagics and fish...close to home. We saw a school of 500 to 600 mobulas (like stingrays)! Next dive, we saw a huge jewfish that let us lay on the sand next to him! Huge schools of fish — two or three thousands! Even saw white-tipped sharks on most dives!" See for yourself on page 88 of Undercurrent's new book Divers Speak Out — YOURS FREE when you try a subscription to Undercurrent, America's leading dive travel letter.

For 17 years, *Undercurrent* has given thousands of serious divers uncensored reviews...totally and brutally honest reports...of dive travel the world over in our monthly letter. Our circle of divers helps you check out dive resorts, hotels, and liveaboards so you know what to expect and how much it

will cost before you go.

Imagine snorkeling with whale sharks in 15 feet of water...

See the very first page of your FREE copy of Divers Speak Out to discover this ideal dive travel destination. Plus:

- In the Caribbean "Hike through rain forests to waterfalls...where the diving is done in hot, bubbling springs and underwater volcanic craters!" Hint the diving's as good as Bonaire. **Page 92**
- The best liveaboard for your money in Australia. Described as a "floating hotel with a 4-star restaurant on board" this liveaboard has "every diver creature comfort built in." Page 7
- If you're an underwater photographer, you'll love this destination: "This wonderful destination promises consistently reliable water conditions, colorful reef scenes, clear water and sunshine every day. All this on a super-luxurious dive liveaboard with a top-notch crew and gourmet chef." **Page 201**

Cut through the bype about dive spots from the Caribbean to the Andaman Islands

Be warned of this La Paz operator: "Our group of 5 divers was placed on an aging diesel diving/fishing boat with an extended family of 10 including several small, unruly children were going snorkeling...We would not be able to dive with the sea lions...but only where the children could safely snorkel...The rest of the day was spend indulging the children in trip to two beaches, a total waste of time for divers." **Page 159**

"No action...no big fish, turtles, sharks, or mantas." Although this place was described as offering hammerheads, "This place was pure hype"

said one reader. Page 67

"Too many cruise ships...Extensive reef damage and poor visibility. Boats were very slow — one did not even have tank racks! Divemasters were inexperienced and sucked up all their air 40 minutes into a 60' dive....Save your money and go some place decent!" **Page 169**

Undercurrent's Divers Speak Out! is packed with timely, firsthand accounts of dive travel opportunities the world over. Plus, in your monthly issues of Undercurrent, you'll also get articles on underwater photography, dive travel, all you need to know about dive computers, life-saving dive tips, techniques for doubling your bottom time, reviews of new dive products and services, equipment evaluations, safety procedures, and much, much more. The one thing you won't find in the pages of Undercurrent is advertising — none at all!

Don't take another dive without first reading Divers Speak Out!

MONEY BACK GUARANTEE

If you're not totally delighted with the wealth of objective diving information you receive, let us know. You'll get a full refund at any time. Plus, you get to keep *Undercurrent* — 246 pages of hard-hitting facts about dive travel —ABSOLUTELY FREE!

Safe and happy diving.

John Daniel, Publisher Undercurrent

(9-5 Eastern time) Or fax your order to: 410-223-2619

P.S. Two Extra Bonuses with a two-year subscription: In 10 Classic Dive Destinations you'll find fantastic diving, great visibility, a wondrous variety of fish, and classic photo opportunities around the world. In 6 Fabulous Liveaboards, we reveal 6 superb dive boats with helpful crews and great food and accommodations —several are more than reasonably priced, they're downright cheap!

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ECO-QUIZ ANSWERS

(From page 87)

- **1** ► C. A recent study showed that, on average, a diver touches the reef seven times in a half-hour.
- **2** ► B. Yeah, that's an easy one. But why do we still see so many dangling consoles?
- **3** ► B. Humming into your regulator will reduce your strangeness and take advantage of the shark's natural curiosity.
- **4** ► C. Even if you're perfectly neutral, you'll rise with each inhalation and descend slightly with each exhalation. Also, when swimming you need less air in your BC than when hovering. Eco-divers anticipate the transition.
- 5 ► D. The timing of biological events—particularly those pertaining to mating and reproduction—are too important to be dictated by any single cue. As a result, vertebrate animals have built-in safeguards to prevent mistakes due to anomalous short-term environmental cues. It would take several weeks of continuous light-shining to really screw up a fish's endogenous rhythms.
- **6** ► C. Always know where the reef is and where your fins are in relation to it. Even experienced divers tend to forget the added length on each foot and the damage it can do.

7 ► D.

8 ► A. You'll find more photogenic seahorses on other dives.

9 ► D.

10 ► D. Take only photos—unless someone else left more than bubbles.

11 ► D.

- **12** ► A or B. Keep your hands off the reef
- **13** ► A. This way you'll stay in the turtle's blind spot, a cone-shaped area that extends rearward from the beak.
- **14** ► D. A well-informed diver can make a difference. If you know the issues, you can voice your opinions, and, even more importantly, spend your money with operators and resorts that support environmentally sound solutions.
- **15** ► C. A disapproving look may stop the behavior temporarily, but a little education after the fact will make a diver think twice before doing it again.
- **16** ► B. Depending on the length of your fins and style of your kick, you may have to remain as much as 10 feet above the bottom to avoid stirring it up. Although a sandy plain may seem a lifeless desert, it is home to an array of burrowing and camouflaged creatures—and coral-choking sediments.

BEST MARINE PARKS

(Continued from page 43)

remain major threats to the sanctuary's environmental health.

MALINDI

Marine National Park

Kenya

Malindi Marine National Park, estab

lished in 1968, is Kenya's environmental centerpiece on an Indian Ocean reef system that stretches 200 miles. More than 50 species of coral are found here, as are about 500 species of reef fish, including the Koran angelfish, named for the scriptlike markings on its tail. Drift diving on offshore reefs offers a chance to encounter loggerhead turtles, whale sharks and manta rays.

Mooring buoys have been installed and steps are being taken to monitor the



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effects of erosion and silt washed onto the reefs from the nearby Sabaki River—one of the park's biggest threats. Field staff are being trained by dive experts from the Netherlands. Spearfishing, sportfishing and coral and shell collecting are prohibited. Marine park entry fee is US\$7.15.

Environmental Alert: Despite conservation efforts, Sabaki River siltation, rapid development, water pollution and shell collectors are taking their toll on reef populations.

RAS MOHAMMED

Marine Park

Egypt

Ras Mohammed is the northernmost reef system in the Eastern Hemisphere. "Mohammed's Head" is located at the southern tip of the Sinai Peninsula, at the confluence of the Red Sea and the Gulfs of Suez and Aqaba. The 100-mile stretch of coastline was designated a marine park in

1985. More than 1,000 species of fish can be found in the Red Sea, 30 percent of which are endemic. Marine life includes scalloped hammerhead sharks, blue-spotted stingrays and the Red Sea clownfish. Walls covered with soft corals bring creatures that thrive on light close to shore.

Tour companies work with the government to monitor diving activities and moorings. Divers must pay a \$10 per person, per day park fee. Fishing or spearfishing, removing or damaging anything alive or dead, anchoring and walking on the reef are prohibited.

Environmental Alert: Oil pollution from tanker traffic through the Suez Canal poses a serious threat to Red Sea reefs, fish and birds.



National Park

Thailand

The Similan Islands (Malay for "nine" islands) were first protected as a marine park in September 1982. The eastern shores of the nine uninhabited islands in the Andaman Sea consist of calm, gently sloping shallow reefs, while the western shores are wild and woolly, punctuated by caverns, walls and tunnels washed by swift currents and nutrient-rich upwellings from the depths of the Andaman Basin. Jacks and mackerel are common sights in the 49-square-mile park, and divers have the opportunity to see turtles, stingrays, eagle and manta rays, the occasional whale shark and the rare bowmouth guitarfish.

National park lands, established in 1961, cover 11 percent of the nation—one of the highest ratios of protected land in the world.

No dive resorts here—just bungalows and camping. Diving is conducted from live-aboards and day boats, based 50 miles to the southeast in Phuket. Park admission is 5 baht.

Environmental Alert: A population and development explosion, as well as pollution, overfishing and dynamite fishing, pose a serious threat to the marine environment. Enforcement is no easy job—more than 40 park rangers have lost their lives in the line of duty over the last 20 years.

Nick Lucey is an RSD associate editor.





BREATHING WATER

How To Handle Drowning and Near-Drowning Divers

By Renée Duncan Westerfield, DAN Communications Coordinator

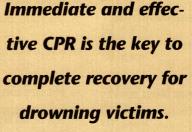
Ithough drowning is a relatively common cause of accidental death in the general population, it is, fortunately, rare among scuba divers. But it can happen. And if it does, we as divers should be prepared to do as much as we can to help a victim survive by knowing the techniques of rescue and resuscitation.

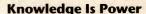
It's a well-documented fact that immediate and effective cardiopulmonary resuscitation (CPR) is key to complete recovery. Water rescue, however, requires study and practice in order to gain the knowledge and skills necessary to help an injured diver or nearby swimmer. But if drowning is so infrequent for scuba divers, then chances are you'll never need to learn that skill-right?

Tell that to the countless people who have made full recoveries thanks to an alert diver, lifequard or fellow swimmer.

> "Having that skill is just another added safety measure you can take when you go diving," says Bill Clendenen, DAN's training coordinator. "If you never have to use it, count yourself as fortunate, but consid-

er the value of this skill if you can help make a difference for someone."

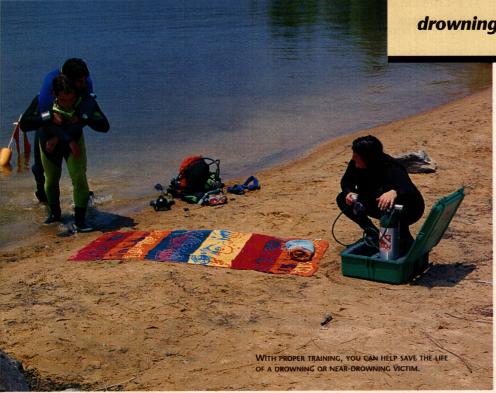




The first step in the process of learning the necessary lifesaving skills is getting correct information. What is drowning? How does it differ from neardrowning?

Dr. G. Yancy Mebane, editor of DAN's Dive and Travel Medical Guide (formerly known as the DAN Underwater Diving Accident Manual) and a specialist in this topic, puts it succinctly: "A drowning victim experiences cardiac arrest while submerged; a neardrowning victim experiences a lack of oxygen, without cardiac arrest."

The circumstances surrounding a victim's submergence and the amount of time spent under water determine the outcome. The victim of





Simply tear out the reply card, circle the numbers preceding the names of the companies which interest you, fill out your name and address, affix postage, and drop it in the mailbox. You'll soon be receiving information which will help make your diving more enjoyable!

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1-800-866-DIVE See ad pg. 05	I-800-WPB-DIVE See ad pg. 123	DIVE TRAVEL SPECIALIST
2. DIVE ABACO 1-800-247-5338 See ad pg. 88 3. DIVE DIVE DIVE 1-800-368-3483 See ad pg. 119	FLORIDA KEYS	86. CARIBBEAN ADVENTURES
4. EXUMA FANTASEA 1-809-336-3483 See ad pg. 122	43. AQUA NUTS/KELLY'S ON THE BAY	1-800-934-DIVE See ad pg. 121 87. DIVE TOURS/APPLE VACATIONS
5. GRAND BAHAMA WATERSPORTS 1-809-373-6775	1-800-226-0415 See ad pg. 93 44. CONCH REPUBLIC DIVERS	1-800-433-0885 See ad pg. 24
6. SMALL HOPE BAY LODGE 1-800-223-6961 See ad pg. 24 7. STELLA MARIS 1-800-426-0466 See ad pg. 22	I-800-274-DIVE See ad pg. 93	88. REEF & RAINFOREST WORLDWIDE ADVENTURE TRAVEL 1-800-794-9RNR See ad pg. 122
8. UNEXSO 1-800-992-DIVE (3483) See ad pg. 23	45. LOOE KEY REEF RESORT 1-800-942-5397 See ad pg. 93	LIVE-ABOARDS
9. VALENTINE'S 1-800-383-6480 See ad pg. 121	46. LOOKOUT LODGE RESORT 1-305-852-9915	
BARBADOS	1-305-852-9915 47. OCEAN DIVERS 1-800-451-1113 See ad pg. 94	89. AGGRESSOR FLEET 1-800-348-2628 See ad pg. 79 90. NEKTON DIVING CRUISES
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12. THE DIVE SHOP 1-809-426-9947 See ad pg. 88	49. HAWAIIAN DIVERS 1-800-525-PADI See ad pg. 121	1-800-241-4591 See ad pg. 100
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19. SCUBA TRAVEL VENTURES/SEAGRAPE DIVERS	55. SAM'S DIVE TOURS 1-800-886-7321 See ad pg. 121	97. WATERLOG VIDEO 1-800-928-3754 See ad pg. 124
20. UTILA REEF RESORT 1-800-263-9876 See ad pg. 122	PUERTO RICO	SPECIAL SECTION
21. WORLD DIVE ADVENTURES 1-800-433-DIVE See ad pg. 121	56. PUERTO RICO TOURISM 1-800-866-7827 See ad pg . 07	CAYMAN ISLANDS
BELIZE	SOLOMON ISLANDS	98. CAYMAN DIVING LODGE
22. BELIZE TOURIST BOARD 1-800-624-0686 See ad pg. 60	57. BILIKIKI CRUISES LTD 1-800-886-7321 See ad pg. 122	1-800-TLC-DIVE See ad pg. 70 99. DIVI RESORTS 1-800-367-DIVI See ad pg. 72
23. BOTTOM TIME DIVE SHOP/BZ TRAVEL SERVICES 1-800-382-7776 See ad pg. 20	58. DIVE GIZO ADVENTURE SPORTS 1-800-886-7321	100. DON FOSTER'S DIVE CAYMAN
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25. M/V HOT DIVE 1-800-HOT DIVE See ad pg. 122	1-800-886-7321 See ad pg. 122	1-800-484-9943 Code 3440 See ad pg. 73
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29. B.C. DIVE TOURISM 1-800-665-6000 See ad pg. 22	67. PROVO TURTLE DIVERS 1-809-946-4232 See ad pg 103 68. SEA EYE DIVING 1-809-946-1407 See ad pg 97	1-800-900-7657 See ad pg. 84
CAYMAN ISLANDS	69. TURKS HEAD INN 1-809-946-2466 See ad pg. 97	108. MANTA RAY BAY HOTEL & YAP DIVERS
30. L & M PROPERTIES CO. 1-216-524-1000 See ad pg. 122	UNITED STATES VIRGIN ISLANDS	109. PALAU DIVING CENTER/CARP ISLAND RESORT
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COZUMEL/MEXICO	DIVE EDUCATION & INSTRUCTION	111. PALAU VISITORS AUTHORITY 011-680-488-2793
32. BLUE BUBBLE DIVERS 1-405-275-5222 See ad pg. 123	73. CORAL CAY CONSERVATION	112. POHNPEI TOURIST COMMISSION 011-691-320-2421
33. CARIBBEAN DIVERS 1-800-874-7312 See ad pg. 101 34. CASA DEL MAR/TROPICAL CONCEPTS	1-305-945-6789 See ad pg. 121	113. SEAWARD HOLIDAYS - S. S. THORFINN
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1-800-346-6116 See ad pg. 116 39. MELIA MAYAN PARADISUS	1-800-325-8439 80. IDEATIONS DESIGN, INC.	SURIECT TO CHANCE
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a near-drowning must be taken to a medical facility and evaluated, no matter how nonthreatening the episode may seem.

How Does It Happen?

The drowning process occurs in stages—the first involves surprise and possible panic, in which the person attempts to keep his head above water, taking deep breaths and thrusting his arms downward to try to remain above water level.

While fighting to stay afloat, the victim will often hyperventilate, and with little air retained in the lungs, become negatively buoyant and submerge. Then reflex breath-holding begins; the urge to breathe becomes stronger as the victim consumes available oxygen from the air remaining in his lungs.

After two or three minutes, the victim unconsciously breathes under water. Oxygen deficiency causes brain depression (lack of any activity), which, combined with the instinctive urge to breathe due to the accumulation of carbon dioxide in the body, causes the reflexive inhalation of water into the lungs.

The drowning individual, although unconscious at this point, begins to swallow water reflexively in order to prevent its entrance into the lungs. As oxygen is consumed in the body, the urge to breathe becomes stronger, with reflex swallowing giving way to a deep breath. This fills the lungs; the individual becomes more negatively buoyant and tends to sink downward, while continuing to breathe unconsciously.

At this point, brain functions and heart action become more depressed because of the lack of oxygen; the heart rate slows, leading finally to cardiac arrest and a final convulsion.

With a near-drowning victim, however, complete recovery is possible if two conditions are met: if the victim is rescued before water is breathed in, and if breathing is restored before circulatory arrest occurs (which can cause permanent brain damage).

Time Is of the Essence

When was the individual's last breath above water?

This is the key question you need to ask when you consider resuscitation. After the individual submerges, underwater breathing can begin in as little as three to four minutes. If the victim is recovered before underwater breathing begins, resuscitation may not be as difficult.

After the victim begins underwater breathing, it takes only another three to four minutes before profound oxygen deficiency leads to cardiac arrest. Following cardiac arrest, it takes only another four to six minutes before the brain is damaged beyond the possibility of recovery.

The total time of submergence with the chances of recovery, then, can be expected to be 10 to 12 minutes at most. However, there are instances when this is not true. In recent years, a number of individuals have recovered from near-drowning incidents—despite exposures of up to an hour in cold water.

How is this possible?

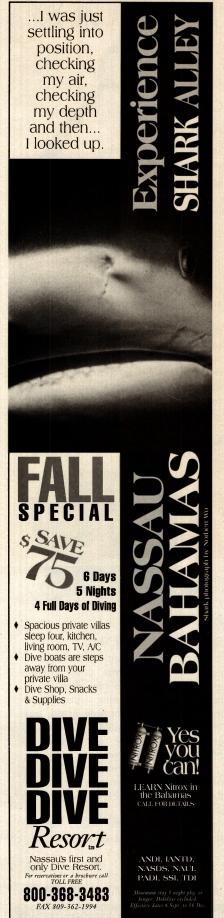
This phenomenon can be partially explained by a process known as the mammalian diving reflex. Triggered when the face is exposed to cold water, this reflex causes shunting (shifting or diverting) of the blood from the skin, muscles and abdomen to the tissues that are most sensitive to the lack of oxygen—the brain, heart and lungs.

Other cold-water effects are equally important in the survival of cold-water drowning. Immersion hypothermia, which is marked by cooling of the brain and the slowing of both circulation and metabolism, surprisingly, can have a protective influence as well as a deadly one.

In humans, the areas of greatest heat loss are in the head, neck and groin because so many arteries are close to the skin in these areas. The brain cools faster than the other tissues in the body, causing a drop in oxygen requirements. Strangely enough, the available oxygen can then supply the body's needs for a longer period of time.

The maximum exposure time before resuscitation is unknown, but at present CPR is advised for exposures of up to one hour. Attempts past one hour are valid, but they have been generally unsuccessful. The water temperature is important—the mammalian diving reflex doesn't work in water temperatures above 70F.

As soon as the face is taken out of the water, the individual's protective diving reflex shuts down. Intact survival, then, depends on resuscitation at the accident scene. Cold water applied to the forehead, face or inside the nose



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will produce very slow breathing and pulse, redistributing the blood supply.

The next step is to begin first-aid measures. Assess the ABCs—airway, breathing and circulation. Perform cardiopulmonary resuscitation as soon as possible; begin rescue breathing while in the water if the individual is not breathing spontaneously and there is no risk to you as the rescuer.

Remove the victim from the water, check the carotid pulse in the neck and begin chest compression if you find no pulse.

Are You Ready To Help?

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This article was taken from *DAN's Dive* and *Travel Medical Guide*, now available to all interested divers. To order, call DAN Member Services at (800) 446-2671.



Divers Alert Network (DAN) is an international tax-exempt nonprofit member-supported diving safety organization based at Duke University Medical Center in Durham, N.C. Since 1980, DAN's primary mission has been to help make diving safe for recreational scuba divers. It accomplishes this goal by providing medical consultations for injured divers, by collecting and analyzing diving accident and fatality information, by promoting educational programs, by offering diving accident insurance and worldwide medical evacuation coverage and distributing Alert Diver, an awardwinning diving safety and health magazine. DAN is supported in these endeavors by a network of diving medical experts, hyperbaric facilities, instructors, stores, training agencies, clubs and manufacturers.

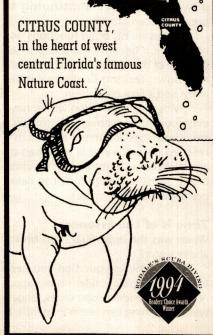
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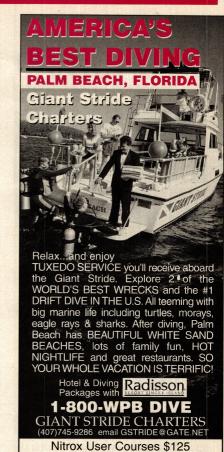
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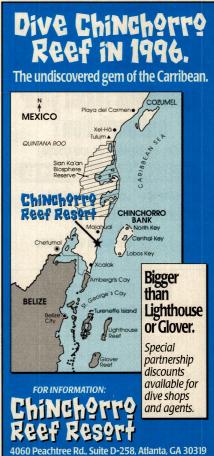
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LAST LOOK?



CLOCKWISE FROM UPPER LEFT: MICHAEL FRANCIS/ WILDLIFE COLLECTION; HENRY HOLDSWORTH/ WILDLIFE COLLECTION; C. GLEN MILLS/ TEXAS PARKS & WILDLIFE; FLIP NICKLIN/ MINDEN PICTURES; KEN DEITCHER/ WILDLIFE COLLECTION; MARK CONLIN/ WILDLIFE COLLECTION; JACK SWENSON/ WILDLIFE COLLECTION.

1. American Crocodile

Status: Endangered Population: 400 in the U.S. Trend: Stable Major threat: Habitat loss and alteration

2. California (or Southern) Sea Otter

Status: Threatened Population: 2,100 to 2,400 Trend: Minor increase Major threat: Oil spills

3. Kemp's Ridley Turtle

Status: Endangered Population: Unknown Trend: Stable to decreasing Major threat: Human encroachment on nesting beaches; pollution; poaching; accidental kills in commercial fishing

4. Comanche Springs Pupfish

Status: Endangered Population: 12,500 to 15,000 in protected habitats Trend: Decreasing Major threat: Habitat loss and alteration

5. Hawaiian Monk Seal

Status: Endangered Population: Less than 1,500 Trend: Decreasing Major threat: Limited habitat and human encroachment

6. Blue Whale

Status: Endangered Population: Unknown Trend: Probably increasing Major threat: Slow recovery rate due to commercial whaling

7. Hawksbill Turtle

Status: Endangered Population: Unknown Trend: Decreasing in the Atlantic Ocean; unknown in the Pacific Ocean Major threat: Egg and adult poaching; alteration of nesting habitat; entanglement and consumption of marine debris (monofilament, plastic, styrofoam); incidental take

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